

KŪKULU OLA HOU
REBUILDING NATIVE HAWAIIAN HEALTH BY RECONNECTING ANCESTRAL
PRACTICES OF TRADITIONAL MEDICINE: AN INVENTORY OF RESEARCHED
CUSTOMS, RITUALS, AND PRACTICES RELATING TO HAWAIIAN MA‘I.

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Disclaimer: this is not an exhaustive list or repository for Hawaiian knowledge of *ma ‘i* and *ola*, the *hana* shall continue for many years of rebuilding. The investigator and author have had full control over the research studies and the present dissertation. There is no conflict of interest to report.

<i>Kū ka ‘i ‘ia ka hā loa lā</i>	The great breath has been exchanged
<i>Pāwehi mai nā lehua</i>	Honored and adorned is the Lehua
<i>Mai ka ho ‘oku ‘i a ka hālāwai lā</i>	From zenith to horizon
<i>Mahalo e Nā Akua</i>	Gratitude and thanks to our Akua
<i>Mahalo e nā kūpuna lā, ‘eā</i>	Gratitude and thanks to our beloved ancestors
<i>Mahalo me ke aloha lā</i>	Gratitude, admiration, thanks, and love
<i>Mahalo me ke aloha lā.</i>	To all who are present, both seen and unseen.

(Excerpt from *Oli Mahalo*, by Kēhau Camara)

ABSTRACT

This qualitative health study examined customs, rituals, and practices relating to Hawaiian *ma‘i*, —*kānaka ‘ōiwi* perceptions of imbalance, illness, sickness and disease—and produced a comprehensive inventory of findings. *Ma‘i* shape biomedical classification of illness by Native Hawaiians from their *Ka ‘Oihana Maui Ola*; recounted here from the nosology within their traditional Hawaiian health structure. A Hawaiian medical epistemological framework was developed to conduct this mixed method study across eight arms before interpreting both ancient and contemporary knowledge and beliefs. Primary data collection consisted of key informant interviews (N=25) and one focus group (N=25) sampling from experts and learners of traditional Hawaiian medicine. Secondary data collection, synthesis and analyses were conducted in English and *‘ōlelo Hawai‘i* utilizing over 100,000 records in multiple archives (N=11). Study significance indicates the first comprehensive medical inventory documenting knowledge of Hawaiian *ma‘i* across time periods and traditional practices, systematically referencing more than 7,000 Hawaiian *ma‘i* terms and dozens of unique disease classes and categories. Findings suggest this integrative medical inventory and taxonomy can inform the diagnostic process and improve diagnosis procedures for health care and prevention. Further, it can create new quality standards for culturally and linguistically appropriate services for Native Hawaiian health.

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LIST OF ABBREVIATIONS

CDC	Centers for Disease Control and Prevention
DSM	Diagnostic and Statistical Manual of Mental Disorders
ICD	The International Classification of Disease and Related Health Problems
n.d.	No Date
US	United States
UN	United Nations
WHO	World Health Organization

PREFACE

Explanation of the Non-traditional Dissertation Format

This dissertation project has been written in the non-traditional format. In this format, it is designed to be published in a peer-reviewed journal, thus adhering to maximum word count, audience scope and style guidelines. Traditional chapters are abridged and modified from a comprehensive literature review including the research hypothesis used to guide this study. Several sections are standalone manuscripts currently under peer-review in 2017 for publication. These include content articles that expand from the Native Hawaiian Medical Inventory and the Hawaiian Taxonomy of *Ma'i* findings created from this study: *Nā Ma'i Kama 'āina ma Ka 'Oihana Maui Ola: Understanding the Traditional Hawaiian Health Structure and Hawaiian Perceptions of Imbalance as Illness*; *Nā Ma'i Malihini ma Ka 'Oihana Maui Ola: Illness Change in Hawai'i and the Mo'ohia of Diseases Introduced to Kānaka 'Ōiwi*; and *Examining Ma'i Pālahalaha Associated with Climate Change: Infectious Disease Impacts on Native Hawaiian Women's Health in 19th Century Hawai'i*. Further, forthcoming articles include detailed methodological contributions to the field of Hawaiian medical ethnohistory with source collection specificity: *Examining Ma'i Kama 'āina Among Kānaka 'Ōiwi in the 19th Century Nūpepa: Key Findings and Methods from Digital Research and Indigenous Scholarship Efforts* and *Hawai'i's First Medical Library Documenting Ma'i Among Kānaka 'Ōiwi in the Nineteenth Century in The Queen's Heritage Collection*. Lastly, one process article is in development that positions the principal investigator grounded in reflexivity with emic considerations for native research protocols: *Reflections from a Native Hawaiian Approach to Promote Traditional Medicine Through Ancestral Knowledge Translatio*

INTRODUCTION

Hawaiian *kūpuna* (ancestors) taught us valuable lessons about *ma 'i*¹ (Native Hawaiian imbalance, illness, sickness and disease). They were powerful observers of the body, mind, spirit and environment and offer us nuanced understandings about the balanced forces between *mana* (spiritual power; special quantified energy) and *mauli ola* (essence of life including health). *Kūpuna* knew that one *ma 'i* could have several types of symptoms, each one distinct from the other. When a *ma 'i* was assessed, trained practitioners of traditional Hawaiian medicine followed its color, duration, acuteness, pathway, location, odor and effect on the individual and their *'ohana* (family). Depending on the classification after evaluation, *kūpuna* diagnosed the true source of the imbalance through its etiology or pathology.

Kūkulu Ola Hou is a transdisciplinary study that produces the most robust classification of Hawaiian *ma 'i* to date. Approximately one hundred thousand (100,000) pages from *'ōlelo Hawai'i* (Hawaiian language) and English sources from the eighteenth to twenty-first centuries were reviewed to construct this Native Hawaiian medical inventory. Traditional and contemporary *kānaka 'ōiwi* (Native Hawaiians²) perceptions of imbalance as illness and disease informed this work. The study is informed by primary and secondary sources from *nūpepa* (Hawaiian language newspapers), oral histories, literature, archives and narratives. More than seven thousand (7,000) terms accounting for various *ma 'i* were identified, further evidencing the ways in which our *kūpuna* connected discord in the individual, family, community and land division with *ma 'i*. Compiling terms and concepts in English and *'ōlelo Hawai'i* is the first comprehensive step in restoring connections to our *kāhuna* (priestly specialists) and the *Ka 'Oihana Mauli Ola* (Traditional Hawaiian Health Structure). We also understand the dual states of *ma 'i* and *ola* (well-being) in the way our *kūpuna* knew them. This consolidation of terms, and

developmental process to conceptualize all of these conditions through a culturally-established taxonomic framework, supports the reality that health and well-being is uniquely Hawaiian.

This study reintroduces us to traditional Hawaiian medical terminology in *o ka wā mamua* (traditional time period); discovers new concepts in *ka mo‘ohihia* (era of generational entanglement); examines current conditions among Native Hawaiians *o kēia au* (contemporary present); and proposes new categories of emerging varieties into *o ka wā mahope* (future time) (Crabbe and Fox 2016, Crabbe et al.). Thus, new purpose is given to names and distinct medical phrasing in the context of customs, rituals and beliefs that guided rebalancing each *ma‘i*. Here, I provide an introduction to the scope and theoretical framework of the process and the major outcomes. The inventory was created through the intergenerational accounts of many represented in collections and materials. In this way, a well-filled ‘*umeke* (gourd) of Hawaiian knowledge is shaped and provided back to living experts within these ‘*oihana* (professions). The study, as an open centerpiece to discuss the future health of the *lāhui* (Hawaiian people), is based on significant medical and ancestral knowledge steeped in the ancient practices of *kānaka ‘ōiwi*.

Twenty-five years ago, Kekuni Blaisdell published an important article, *Historical and Cultural Aspects of Native Hawaiian Health* (1989). Dr. Blaisdell was a pioneer of Hawaiian medicine and Founding Chair of the John A. Burns School of Medicine in 1966 in Hawai‘i. Through a native voice, Dr. Blaisdell (1989) contextualized the health status of Native Hawaiians in the 1980’s by reporting chronic indicators. He explained wellness and sickness in *kānaka maoli* by demonstrating how the balance of *mana* and *pono* (harmonious order) was imperative. He asserted, “misfortune, such as *ma‘i* (illness) resulted from altered *pono* or impaired relationships and loss of *mana* (special energy)” (1993: 2).

One decade later, his *haumana* (student) Kamana‘opono Crabbe (1999), presented a Hawaiian conceptualization of depression in *‘ōlelo Hawai‘i*. Dr. Crabbe’s work was specific to the cultural nosology of mental disorders and behavioral illness. Framed in the etiology of Hawaiian psychopathology, in part, Dr. Crabbe demonstrated the way in which macro acculturative and assimilation effects contributed to the disintegration of traditional Hawaiian health and indigenous perspective of syndromes (1998). My work is an extension of this *mo‘okū‘auhau* (genealogy) of *kānaka maoli* research lineage.

Hawaiian *ma‘i* provide an epistemological framework of pathologies that are culturally shaped, thereby enabling us to examine the links between culture, history and biological disease; together, these all generate *lāhui* imbalance (Fox 2016). Health scientists are then able to understand how cultural and socio-political shifts can cause, treat, or cure illness among *kānaka*. By systematically studying *ma‘i*, clinicians and practitioners gain medical insight by way of a cultural lens using a Hawaiian framework. “The promotion of culturally based solutions does not imply the abandonment of all Western interventions of health care; rather, it suggests a need to expand our repertoire of knowledge on health and to learn from many sources” (Mokuau, 2011, p. 105). Integrating this inventory into traditional medicine discourse provides the opportunity to rebuild Native Hawaiian health through an ancestral taxonomy unique to our culture, norms and perspectives. Further, this integrated inventory upholds the reality of indigenous and inherited knowledge as important for the health of native communities (Blaisdell, 1993, Crabbe 1998, Rezentes, 1996). In sum, this approach supports the restored balance of a healthy ethnic identity (Crabbe 2002, 2007). Research indicates that integrative medicine honors tradition, and offers the ability for patients seeking preventative approaches to health and well-being (Wolever 2012).

This aligns directly with the tenets of *Ka 'Oihana Maui Ola*, which sought to keep *ma'i* and *ola* in harmony.

This study fills a gap in research, providing key knowledge into the accessibility of traditional Hawaiian medicine through ancestral practices, customs and ways of knowing. Responding to a plan developed by Nā Limahana O Lonopūhā (2011), this research was initiated by community leaders and Native Hawaiian cultural practitioners to address *ka 'ai pono* (healthy consumption). It calls for the ability of *kānaka 'ōiwi* to access healthier lifestyles through improved quality in health services among Native Hawaiians, which is activated “by increased knowledge of Native Hawaiian illness, *ma'i* so to increase integration of western models with traditional prevention and management strategies” (p. 5). This multi-phased project attempted to address gaps and improve practice, policy and programming by connecting the future of Native Hawaiian health to its historical vibrancy. Specifically, the project documented information about Hawaiian *ma'i*, compiled medical and health information on the existence of *ma'i* for public use, created a potential framework for *ma'i* to improve diagnostic procedures in traditional Hawaiian medical practices, and suggested quality standards in the role for *ma'i* through culturally and linguistically appropriate services for Native Hawaiians.

RESEARCH AND ANALYTICAL APPROACHES

The *Kūkulu Ola Hou* project is original research based on inductive and deductive approaches that utilized qualitative inquiry from a foundation of Hawaiian methodologies and content. Using grounded and phenomenological approaches, secondary source content with primary ethnohistorical context provided an evidence based foundation. Here, further investigation of ancient Hawaiian practices of traditional medicine evolved into a medical inventory and

classification taxonomy that would be understood in a contemporary way. Comparative strategies were used throughout the project. Consequently, processes were established to systematically construct *ma 'i* through historical narratives and contemporary accounts, further contributing to the authenticity, validity and reliability of this work.

Taxonomy is the scientific classification of organisms into different categories, typically considered in the discipline of studying plant and animal biology. In medical practice, taxonomy refers to tracking diseases, conditions and health problems of an individual patient. For example, clinicians, hospitals and insurers use taxonomies as a basis for standardized diagnoses and for the health-care industry to determine reimbursement for care (Committee on a Framework for Development a New Taxonomy of Disease National Research Council 2011, Reed 2010). In this article, I present the findings in a way that honors the development of the Hawaiian philosophy of medicine and the education of *kāhuna* expertise regarding *ma 'i* and *ola*. In Hawaiian belief, imbalances represent the ontological domain (Wasserman 2014) specific to where *ma 'i* and *ola* are situated within *mauli ola* concepts and the treating *'oihana*. Taxonomy draw from the hierarchical model used to distinguish medical categories and terms. Drawing from medical anthropology, these terms are not merely philosophical. They can be logically traced through appropriate semantic networks that overlap and link beliefs to existing organizational patterns (Frake 1961, Kleinman 1977). Primary data from this substantiates the practice between traditional Hawaiian medicine practitioners and their application of healing practices. The Hawaiian taxonomy of *ma 'i* and corresponding Native Hawaiian medical inventory adapts multiple hierarchies of numerous sources using a cultural foundation and *'ōiwi* concepts. These indigenous concepts provide a medical epistemological context of pathologies that are culturally specific, enabling us to examine the links (Khushf 2013, Wasserman 2014).

Study Objectives

The right of a people to their culture is protected in the *Universal Declaration of Human Rights 1948* (The United Nations 1948). UN Article 27 states that “everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits” and “everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he (sic) is the author” (p. 7). I argue that the underlying factors in the connection between imbalance and illness or disorder within a native cultural group are supported “as a common standard of achievement” (p. 1), and should be protected for *kānaka ʻōiwi* and their self-determined right toward improved well-being beyond physical health conditions. “Culture influences all aspects of health and illness, and thus affects all psychiatric syndromes” (Wig 1994: 8). More specifically, *ma ʻi* philosophically and functionally symbolize traditional exemplars of ancestrally-based wisdom in *Ka ʻOihana Maui Ola*. Cultural criterion, therefore, become syndromes—a set of signs and symptoms that are correlated with each other (Merriam-Webster, n.d.)—that we can grasp in contemporary ways. *Kūkulu Ola Hou* traces sets of emotions or negative actions that develop into an identifiable pattern of imbalance in the Hawaiian psyche, forming concurrent *ma ʻi* that are evident to trained practitioners. Medical ethnohistories suggest a deep and rich philosophy of health and sciences uniquely embedded within the ancient practices of *kānaka maoli*. This research was motivated by the desire to apply traditional Hawaiian systems of health and medicine to the analysis and resolution of clinical questions.

How is Illness Typically Classified in Conventional Medicine?

In conventional medical practice, there are ample resources that help to clinically diagnose diseases by providing access to information which includes medical history, symptoms, physical signs and assessment result indications. The premier global references are *The International Classification of Disease and Related Health Problems* (ICD), the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), and *The Merck Manual of Diagnosis and Therapy* (The Merck Manual) (Corp., Merck Sharp & Dohme 2016, Reed 2010, WHO 2016). I analyzed the improvements and limitations of these models prior to the creation of the Native Hawaiian medical inventory and construction of the taxonomy of Hawaiian *ma 'i* for comparative purposes. However, I do not intend to insert this work in the models above-referenced.

Published by the World Health Organization (WHO), the ICD is the global standard that defines diseases, disorders, injuries and other related health conditions listed in a comprehensive, hierarchical fashion that allows for classification. This system is designed to promote international comparability in the collection, processing, classification and presentation of health statistics (Reed 2010). It is the premier resource allowing for global comparability, and is the main resource used in medical coding for billing as well as the official diagnostic system in the United States (US) (Reed 2010). The 11th revised edition is to be released in 2017-2018 (WHO 2016). The American Psychiatric Association first published the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) to describe mental disorders along a continuous spectrum of symptoms, rather than classifying them by categories. Its most recent update in 2013 is used widely in clinical settings. The DSM-5 represents the best information currently available for clinical diagnosis of mental disorders. “Patients, families, and insurers can be confident that effective treatments are available and that the DSM is the key resource for

delivering the best available care” (American Psychiatric Association 2013). The ICD includes a section classifying mental and behavioral disorders in its fifth chapter. This section was developed alongside the DSM and the two manuals use the same codes (Reed 2010, WHO 2016).

The Merck Manual on the other hand is entirely online and serves as a digital repository. Merck’s mission statement promotes high levels of accessibility for providers and consumers so that “health information is a universal right and that every person is entitled to accurate, accessible and usable medical information” (Corp., Merck Sharp & Dohme 2016). They promote “responsibility to protect, preserve and share the best current medical information to enable more informed decisions, enhance relationships between patients and professionals, and improve health care outcomes around the world” (Corp., Merck Sharp & Dohme 2016). Users can access information such as etiology, diagnosis, prognosis, treatment, key points on that condition and resources for each search yield. Diagnostic criteria are easily in accessible format, and useful in diverse medical and health settings.

These conventional classification systems and repositories have advantages in purpose and usage as an everyday resource. Easy storage, retrieval and analysis of health information for evidenced-based decision-making are essential to their credibility and generalizability across providers and their specialties. This allows for sharing and comparing health information between hospitals, regions, settings and geographic. Their utility proposes comparisons for how the outcomes of this specific study might be made publicly available in the future.

Gaps and Criticisms. Though there are many benefits that come with ease in access and content, there are also many criticisms, especially around the lack of cultural relevancy, congruity with childhood and adolescent disorders (Canino and Alegriño 2008) and utility for developing

interventions in localized contexts (Mezzich 1994). Further, regional adaptation for cultural specificity should be encouraged to address culturally-bound syndromes and dysfunctions, which have distinct expressions from universally North American and European factors in disease presentation (Razzouk, Nogueira and Mari 2011). “To abandon diagnosis and otherwise effective treatment techniques simply because they have not been crafted in the same culture may be a disservice to the patients at hand” (Wig 1994: 8). This not only includes health issues such as stress and coping patterns (Lee and Newton 1981), but also selection criterion, indexing and implementation (McGregor 2005). Research indicates that while clinicians want to avoid too rigid of a categorical system, these tools represent imposition of foreign social environments acculturating to the loss of social structures (Lee and Newton 1981, Lewis-Fernández 2013). The assumption of functional dimensionality, “going from normal to abnormal functioning, from well-being to pathology” (Forero, Castro-Rodríguez and Alonso 2015: 301) is a cultural characteristic to their framework yet does not fit with *Ka ‘Oihana Maui Ola* ontology and epistemology. As evidenced here, indigenous science continues to evolve and various “strategies in Hawaiian communities today reflect persistence of traditional value systems” (Lee and Newton, p. 20).

Kānaka ‘ōiwi have made great strides for inclusion in the medical and health sciences, which is demonstrated in Native Hawaiian leadership and increased graduation rates from post-secondary programs (Blaisdell and Mokuau 1991, Kaholokula, Nacapoy, and Dang 2009). For thirty years, ‘ōiwi leaders have worked to position the next generation of *haumāna* to master Western sciences, conventional academies and emerging technology *and* maintain their own cultural traditions in these disciplines. Hence, practitioners and clinicians in Hawai‘i must understand the indigenous experience of *maui ola* among Hawaiians, particularly when applying

diagnoses and classifications to improve treatment. Unfortunately, there is no central repository for local access to important information that qualifies Hawaiian perceptions of *ma‘i* and connects wellness to quality and values-based research. Therefore, the findings located in this study are important for both research and practice (Mezzich 1994).

Toward a Cultural Taxonomy of Disease; a Contemporary Opportunity for Traditional Hawaiian Medicine

Taxonomic and classification must be relevant to traditional medicine and cultural nosology (Committee on a Framework for Development a New Taxonomy of Disease National Research Council 2011, Forero, Castro-Rodríguez, Alonso 2015, WHO 2013). The Native Hawaiian medical inventory is an opportunity for traditional knowledge of disease to catalyze the rebuilding of its once dynamic *Ka ‘Oihana Maui Ola*. Research suggests that presenting complaints vocalized by the patient differ in Polynesian cultures. This paper reviewed Tongan, Māori, and Hawaiian cultural perspectives in their diagnostic beliefs of depression. Late Tongan Ministry of Health official Palu Lasalo stated that according to his patients and research.

The way a European handles stress – he intellectualizes it and says to himself, “I am depressed”. A Tongan, on the other hand, tends to internalize the concept and is dealt with a somatic (physical) feeling and says “I have a pain in the chest” rather than “I am so depressed my heart aches” (1999, p. 260).

Hawaiian reference to depression is similar to Tongan reference, but includes significant variation. Crabbe (1999) describes the term *‘eha* to illustrate the relevance to uncovering depression through Hawaiian perceptions: “‘eha‘eha too characterizes great pain and agony, torment, distress or tribulations that is often metaphorically expressed as ‘eha‘eha ka na‘au,’ or feelings of the gut are truly hurt” (p. 124). He outlines dozens more terms for Hawaiian depression, which do not translate nor signify similar clinical features in the ICD and DSM. In New Zealand, Rhys Jones (2000) describes Māori beliefs about health and illness which are

similar to the Hawaiian experience where, “there was unanimity in the notion that health us more than just not being sick, that it is a more all-encompassing, holistic concept that brings about resolution or remedy. Basically it’s about keeping a healthy mind, body and soul” (p. 19).

Researches related to the three Polynesian groups underscore the importance of the family unit relative to illness causation and prevention (Crabbe 1999, Jones 2000, Lasalo 1999). There is, however, significant divergence in Hawaiian *ma‘i* as compared to their Polynesian kin. These variations were catalyst to creating an exclusively Hawaiian framework, allowing for an account of the patterns of similarities and differences between the *ma‘i*.

Kānaka ‘ōiwi do not have only a few considerations for classification. Rather, they potentially have thousands, indicating “a practical need in clinical work, teaching, and research for reference to an authoritative lexicon of terms” (WHO 1994:1). In Hawaiian practices, diagnosis is complex and iterative, relying on many of these terms to differentiate one diagnostic criterion from the next. In mental health services for example, “crazy” is a universal stigma widely used to connote mental and behavioral disorders. However, in the Hawaiian case, we see a more nuanced use of the term. For example, Pukui and Elbert (1986) use several terms like *pupule*, *lōlō*, *hehena*, *hewahewa* (p. 422). And, these terms actually represent the severity of *ma‘i* characteristics. For instance, *hehena* is described by Handy (1936) as a true *ma‘i kama‘āina*. It is described as ‘insanity’ in MsSC Handy Box 7.10. *Ma‘i Pupule* is captured in Ka Nupepa Kuokoa (March 30, 1867) as ‘crazy’. Its etiology is described in HEN Volume 1 (p. 1950) as either “hereditary, love potion, or sorcery”. Kawai‘ae‘a (1980a) notes *hewahewa* as ‘demented; deranged of mind from sickness’ (p. 10). Whereas *lōlō* is described as ‘palsied, unable to use one’s limbs, paralyzed, numb’ (Kent 1980: 209) and *lōlō po‘o* as ‘disorder of the brain’ (Kawai‘ae‘a 1980a: 24). Each can be deconstructed and fully explicated from additional findings

in this study. For example, *lōlō* is captured many times across collections by sources in various ways. *Lōlō ka ‘a* symptoms include headache and dizzy spells, with such dizziness that affects one's eyesight and disorients them, enough to physically sprain bones. Its prognosis is death, but it can be cured in a relatively short time through the correct remedy of ‘*awapuhi* (wild ginger; *Zingiber zerumbet*) and *maile* (native twining shrub; *Alyxia olivaeformis*) (MsSC Handy Box 7.10; HEN vol.1 p. 325; HEN vol. 1 p. 1945; HEN vol. 1 p. 1953). One research article could be found specific to *lolo* and *ma ‘i*. In Tonga (Lasalo 1999), *lolo mai* is mostly “described as a feeling of generalised weakness, some experience it as a numbness, others say it is ‘death’ still others refer to it as a loss of power or energy” (p. 259). Clearly, while Tongan and Hawaiian illnesses may be similar in their etiology, the clinical features presented by Lasalo and other archival sources signify vastly differing accounts, regardless of shared traits in Polynesian etymology or commonalities found in medical idioms.

By studying Hawaiian *ma ‘i* such as *lōlō ka ma ‘i*, Hawaiian terminologies are reaffirmed and consciously activate how Hawaiian knowledge in medical and health sciences moves forward according to our own descriptions generated within group research. When individuals and families are empowered to participate in a health system aligned to their principles, they become healthier, and this strengthens culturally and linguistically appropriate health practices (OHA 2015c, U.S. Department of Health and Human Services, Office of Minority Health 2001). Detailed understanding of *ma ‘i* is one such step for Native Hawaiian well-being. Many examples exist, but this paper focuses on this one example.

Progress must take the form of resources for learning and strategies for teaching associated features of illness as uniquely Hawaiian. Changes in balance and manifestations of

symptoms may occur at certain ages. For example, at birth or early infancy compared to childhood (Pukui, Haertig, and Lee 1972a; Pukui, Haertig, and Lee 1972b). Or, may indicate gender specific observations in *wāhine* (females) versus *kāne* (males) (Pukui, Haertig, and Lee 1972a; Pukui, Haertig, and Lee 1972b). Further, onset may specify a geographical region or may be restricted outside of a particular area within the *pae ‘āina* (Hawaiian archipelago) (Blaisdell and Mokuau 1991). Onset, recognition and diagnosis to this degree of specificity highlight the advanced knowledge systems of Hawaiian *kāhuna* and their healing *‘oihana*. In the *Ka ‘Oihana Maui Ola*, the course of *ma ‘i* or its physical, emotional or behavioral expression is variable; in part, depending on the interactions of the environment, interpersonal relationships and Hawaiian spirituality.

To move toward an improved diagnostic system that encompasses cultural determinants and resultant traditional medicine patterns, the Native Hawaiian medical inventory was developed through a Hawaiian lens, using Hawaiian knowledge. This is a promising step toward cultural integration in medical classification and indigenous human rights. All World Health Organization member countries, including the US, are required by international treaty to collect and report health statistics to the WHO using the ICD as a framework (World Health

Organization 2007, Reed 2010). Thus, *Kūkulu Ola Hou* is a part of Hawai‘i’s constitutional responsibilities for health development and maintenance for its people (HRS §226-20 2014). International progress of *kānaka ‘ōiwi* demands global cooperation and alignment with issues unique to our right for free participation in the cultural health of our community. The creation and implementation of our own medical inventory and classification structure protects the material and moral conditions of our *lāhui*. Theoretically supported within the spirit of WHO Traditional Medicine Strategy 2014-2023 (WHO 2013), we have an opportunity to create an

emic classification system that values traditional medicine and incorporates etic taxonomy and classification where applicable and necessary. As the *‘ōlelo no ‘eau* states, “*Ua lehulehu a manomano ka ‘ikena a ka Hawai‘i*. Great and numerous is the knowledge of the Hawaiians”. 2814. (Pukui 1983: 309). By reviewing more than 100,000 records in English and *‘ōlelo Hawai‘i* in eleven archives, one strand of that knowledge was explored within the *Ka ‘Oihana Maui Ola* detailed by *ma‘i*. A summary of those sources and the 7,000 terms of *ma‘i* explicated during the process are presented in this paper.

METHODS

Grounded theory approach is useful for analyzing data within a sociological perspective to develop an understanding of the phenomenon being studied—in this case, *ma‘i*. Here, data guide understanding, rather than understanding guiding analysis. Hence, depending on the guiding questions, different results can be found. The *Kūkulu Ola Hou* project employed a grounded theory method (Strauss and Corbin 1994) to study the Hawaiian phenomenon and perspectives of *ma‘i*.

Primary data for this pilot study were collected through numerous key informant interviews and one focus group with traditional practitioners of Hawaiian medicine. Data were derived through qualitative analyses of trends in traditional Hawaiian medicine related to *ma‘i*. Secondary data were collected via archival and comparative research methods. Historical documents such as newspaper, bulletins, logs, physician journals and personal papers were of primary importance during subsequent literary analysis. Multi-level axial coding was used for open and emergent themes; specific terms were used to cross reference all findings for input into the inventory (Britten 1995, Gill et al. 2008, Kitzinger 1995, Strauss and Corbin 1994).

Collections were identified and ranked to prioritize the secondary analysis. The methodology was adapted at three stages to ensure systemic review remained consistent throughout the project. Multiple review levels and feedback loops occurred to safeguard data integrity and content validity (McGregor 2005).

The sources used were highly contextualized for categorical reference and data filtering. Primary characteristics served as the framework to conduct preliminary analyses. References were categorized according to four primary characteristics: 1) whether the source focus was Hawaiian *ma'i*, 2) the context which the piece was positioned, 3) whether the author made a direct reference to *ma'i* or defined it, and 4) whether *ma'i* was discussed in terms of characterizing illness, disorder, pathology, or disease, or as related to the health symptoms of the above terms.

I began by organizing sources by time period and the year in which they were written. This assisted in sorting procedures based on the era being analyzed. Secondary sources were documented as early as 1778 and as late as 2016. Primary sources were recorded as far back as one hundred generations and into seven generations in the future. In a certain way, time period and dates were epidemiologically linear, but also culturally circular in their framing of *ma'i*. Sources were contextualized to aid in the interpretation of findings and analysis of information for ethnic identity. In this case, largely Hawaiian and Caucasian with others being of mixed ethnicities. This linked directly to gender and the tone in which they wrote. For example, Caucasian males from America wrote in drastically differing tones than Hawaiian females from Hawai'i. We also took note of age and generation of authorship, if the information was known at the time of review. An important demographic variable was the location where the research or writing was conducted. Sense of place is important in Hawaiian methodologies (Pukui, Haertig,

and Lee 1972a; Pukui, Haertig, and Lee 1972b) and qualitative research (Nespor 2000). Some texts were written in academic institutions, others in museums, and still others written informally in homes and private places. The author's field of expertise, discipline or occupation was also considered. It is critical to consider this from both emic (Gaber 2016) and etic (Gaber 2016) approaches when interpreting findings, especially when terms and practices of divergence were noted. There are frequent errors in sources and numerous conflicting results, but the positionality of the author or informant helped to reconcile those issues with care and consideration. This linked directly to the source's cultural and language expertise with respect to either Hawaiian or conventional perspectives.

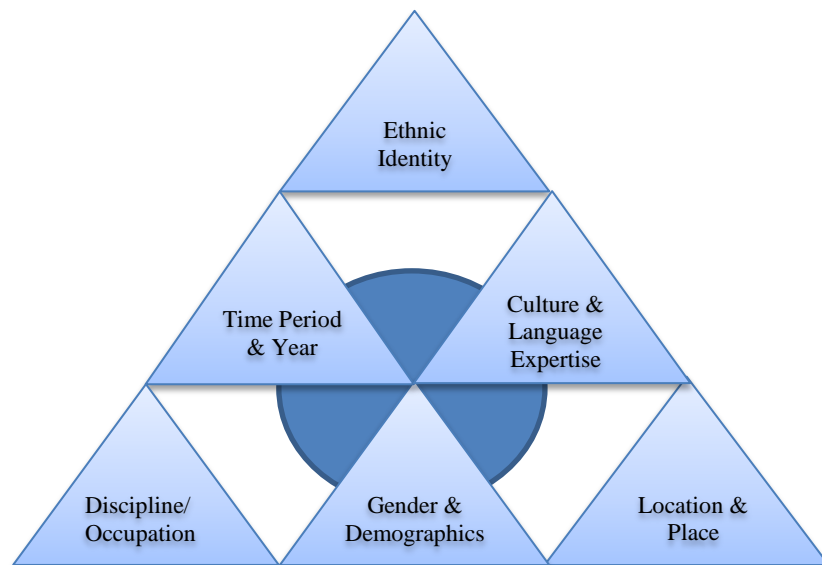


Figure 1. *Kūkulu Ola Hou* Source Contextualization

There were a number of authors who were not *‘ōiwi*, but who wrote with a cultural and linguistic confidence that gave authority to the work and authentically documented Hawaiian customs, rituals and beliefs. Central to authority were author concepts of spirituality, theology and religion. This filter was especially helpful when interpreting the findings from nineteenth century American missionary records that were often critical of Hawaiian practices and at times,

derogatory. Not only were the traditions of the content analyzed, but the perspective of the writer and the source of information authority were also evaluated. This kept the cultural basis of the work at the center of the reconstruction process.

Rhetoric and composition histories do not have critical mass within traditional Hawaiian medicine research theory or practice. We have not yet been able to recognize our common *ma'i* through systemic research methods, finding aids or resources in the same way that other researchers have in Western medical pathology. Additionally, because we do not have canonical historical references, traditional Hawaiian medicine practitioners may find it difficult to address their customary health practice when providing assessment, diagnosis and treatment. Over the course of years, this research rebuilt the Hawaiian medical inventory through seven phases.

Researcher stance, bias and position present limitations of non-neutrality, plurality of native sciences, and theoretical constructs that inform the process to this work.

Methods are about achieving access to information, about finding aids, about reference materials, about archive locations and restrictions, about the condition of the materials, about the existence of evidence or the lack of evidence, and about the triangulation of information --all the factors that impact our “systematic method of gathering evidence” and our interpretation of that evidence, our presentation of our revisionist histories (a la Miller). Just as methodology allows us to theorize the goals of our research, methods allow us to contextualize the research process or the researched subject and materials. Methods make the invisible work of historical research visible (L'Eplattenier and Mastrangelo 2012, p. 69).

Rigorous methods tell us what occurred, how this information was developed and where it was found. Further, a deep methods section will allow the reader to develop a greater sense of trust in the documents and their relationship to connecting sources documenting Hawaiian *ma'i*.

I took tremendous care to create processes congruent with Hawaiian methodologies to gain access to deep knowledge about cultural information beyond simple translation of Hawaiian

words. Four main methods were constantly applied through a continuous loop: a) locating sources and information, b) evaluating of yields, c) systematic interpretation, and d) analysis (Ramsey 2008). Standard research protocols and guidelines were used, but were largely guided by decolonizing methodologies (Crabbe et al. in press, Smith 1999) and a vision to *kūkuku hou* (Crabbe and Fox 2016).

Access to information at the time this study was conducted is unprecedented. Seven phases exploring eight arms within eleven archives represent a network of knowledge available to us left for us by our *kūpuna*. Data derived about *ma‘i* highlight their interconnectedness corresponding to major socio-cultural-political-economic shifts with the disease terms to embed a deeper story of fundamental knowledge possessed by *kānaka ‘ōiwi*. Changes in recent digitization processes highlight the advances made during this study in pushing medical information technology and library sciences for societal use (Committee on a Framework for Development a New Taxonomy of Disease National Research Council 2011). I envision a data repository that makes these analyses and interpretations available for practical use by clinicians and cultural practitioners, alike.

SOURCES

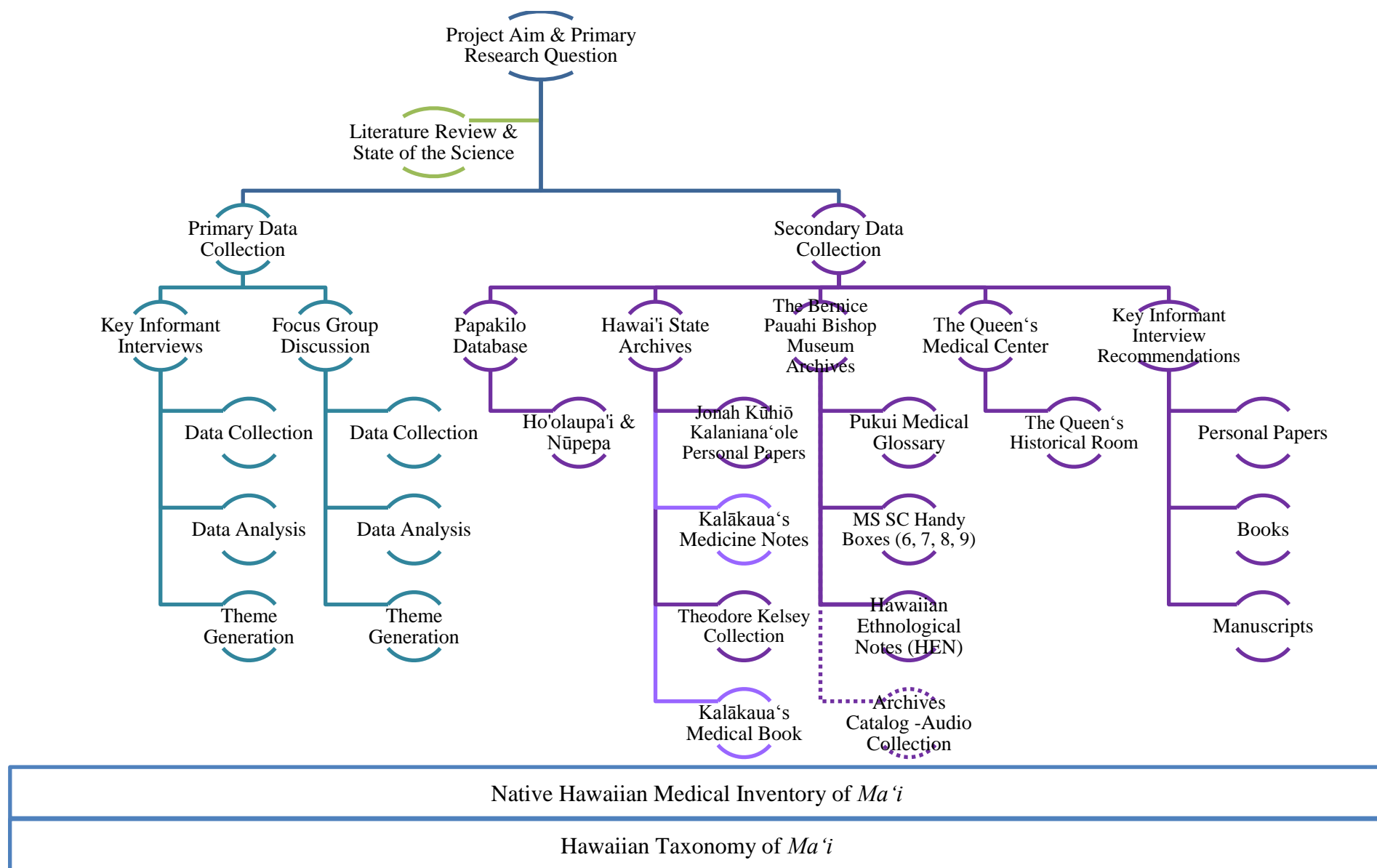
The methods and procedures used to create Hawaiian standards and classification systems have been framed by combining medical classification systems and Hawaiian terminological information to discern *ma‘i* components, processes, secondary conditions, procedures, remedy, co-occurrences and errors in findings. This process was consistent across sources (see Table 1).

Literature Review

Review of the science literature targeted documents that made reference to Native Hawaiian health and was focused, rather than exhaustive. This review included, but was not limited to, the comparative anthropological literature on Native Hawaiian health in Hawai‘i as well as literature defining (and determining and assessing) the ancestral health practices of individuals, places and communities as traditional practices in medicine. Native Hawaiian health experts were consulted to identify texts as well as facilitate acquisition of materials not easily accessible or available to the public. In addition, a collection of texts important to the Hawaiian culture of health and applicable practices were scanned and digitized to create a matrix for other scholars to understand the most relevant text and their alignment to the specific topic within the structure of health and disease via Hawaiian worldview. Organizing these sources within *The Matrix Method* (Garra 2013) served as an important method of organizing references not easily accessible through a typical review processes.

Electronic Searches. Computer-based searches conducted online via the University of Hawai‘i at Mānoa Health Sciences Library and University of Hawai‘i at Mānoa Hamilton Library was limited to January 2015 through May 2015. Key search terms such as “Hawaiian illness,” “Hawaiian disease,” “*Ma‘i*,” “Native Hawaiian health,” “Hawaiian healing,” “Hawaiian culture and disease” were used. The following databases were examined: National Library of Medicine’s PubMed, EBSCOHost, Education Resource Information Center (ERIC) database, Proquest Social Sciences, Academic Search Premier, JSTOR, Project MUSE and Google Scholar.

Table 1. Flow chart of *Kūkulu Ola Hou* Sources



Article Inclusion. A total of 507 citations that were published at the beginning of 2015 were initially identified. Titles and abstracts from all 507 citations were reviewed for topical relevance. This process resulted in 122 unique citations that were more closely scrutinised. Review articles, Letters to the Editor, study summaries and non-research reports were excluded from further review. A total of 63 literature sources were subsequently read in their entirety. Selected sources were based on relevancy to *ma‘i*, *ma‘i ‘aumakua*, *ma‘i kino*, *ma‘i kama ‘āina*, *ma‘i mawaho*, *ma‘i maloko* or *ma‘i malihini*, *ma‘i kino*, *ma‘i haole*, *ma‘i ahulau* or *ma‘i lele*. Following this review, fifty-two sources were found to meet all inclusion criteria and are included in this report. From those fifty-two sources, evidence of 753 terms denotes general categories of Hawaiian illness, pathological signs, nomenclature for symptoms and associated conditions were organized.

Texts from a variety of sources were considered, including theses and dissertations, journal articles, pamphlets, Hawaiian language newspapers, archived museum records, Hawaiian documents, laws, books and technical reports. Sources were written in the Hawaiian and English languages, or were translated from Hawaiian to English. Publication dates ranged from the eighteenth century to modern day. A range of source types were use throughout this research to include journal articles, books, book chapters, bulletins, book chapters, curriculum, edited volumes, essays, reference works, reports, unpublished manuscripts and dissertations.

As described, throughout the review, special attention was given to context detail about “whose voice” was being summarized and what definition was referenced. Understanding voice is critical, particularly because the literature are primarily from scholars and others using a Western lens and the English language to describe and make sense of a construct that is neither Western, nor particularly amenable to direct English translation. In a cultural context, it is

impossible to ignore how outsiders speak for insiders. Therefore, this inventory presents *ma'i* across four different eras using multi-disciplinary Hawaiian expertise.

Primary Data Collection

The foundation of this study has been determined from qualitative health research and ethical guidelines when working with Native Hawaiians as the primary research participants. Such a foundation in research design provides insight into how traditional cultural values within a specific community can frame academic categories, and ultimately achieve a more equitable representation of community and academic knowledge and practices to reduce health disparities (Airhihenbuwa 1994, McMullin, et al. 2009). Many Native Hawaiians prefer to share their experiences orally and face-to-face (compared with surveys or telephone interviews), allowing them to gauge the researcher's intent, sincerity and trustworthiness as information is exchanged (Smith 1999; Braun, Yee, Browne, & Mokuau 2004; Braun, Browne, Ka'opua, Kim, & Mokuau 2014). For the current project, qualitative health research methods were used to engage participants with cultural and historical knowledge about *ma'i*. Significant meanings were derived directly from living Hawaiian cultural practitioners with advanced knowledge of traditional medicine.

'Ike Hawai'i (Hawaiian cultural and historical knowledge) was traditionally recorded, preserved and transmitted in ancient Native Hawaiian society without a written system. Oral traditions formed a body of literature that was as significant and sophisticated as those found in text-based societies (Crabbe et al., forthcoming). Native Hawaiian oral traditions are distinctively and important part of Hawaiian literature. Today, scholars generally recognize that pre-literate or predominantly oral societies maintained complex oral traditions. These traditions

are now recognized as “oral literature,” and are considered as valid as textual works in modern academia and Western culture.

Qualitative research provides a bridge between historical records and oral histories of elders with a cultural knowledge base. “In any particular domain of culture, some people have more knowledge than others” (Judd, p. 241); among Native Hawaiians, *kūpuna* are generally regarded as keepers of such knowledge (Brown 2014, Mau, 2010). For example, this allows for creating themes among elders as robust informants based on their responses. For *Kūkulu Ola Hou*, key informant interviews and focus group discussion were utilized.

Purposeful sampling involves selecting potential participants who represent the group to be studied with the aim of talking to a reasonable cross-section of people (Gill et al. 2008).

Participants in the *Kūkulu Ola Hou* study were selected because they were recognized within the community of traditional practices as having insight and understanding about the research topic of Hawaiian illness and disease, or *ma ‘i*. Participants were pre-identified with expertise in various fields of traditional Hawaiian health.

Key Informant Interviews. Key informant interviews are a form of in depth qualitative interviewing that has the advantage of facilitating a rich dialogue with research participants for the purpose of collecting qualitative data on one or two issues with great detail (Britten 1995). Questions are based on what the interviewee says. For example, the dialogue can be interactive and sensitive to the discipline, language, historical context and concepts used by the interviewee (Ibid). Researcher as the research instrument is a key component to the method (Britten 1995 – or Ibid). Interviews are useful for exploring personal and group knowledge, and understanding experiences, often answering the how and why questions (Kitzinger 1995). The participants’ thoughts, ideas and perceptions are the primary data of qualitative research and can be gathered

in various ways. Methods include semi-structured interviews, document or text review, and reflections from participants (such as *mo'olelo*, or stories) (Brown et al. 2014, Judd 1998, McMullin, et al., 2009).

Twenty-nine separate sessions with twenty-five practitioners occurred between February 2016 and August 2016. They are listed here in alphabetical order with permission and consent³: Reni A'ia'i Bello, Allen Alapa'i, Cy Bridges, Dane Ka'ohelani Silva, Dennis Kauahi, Earl Kawa'a, Edana Wong, Francine Dudoit, Gerry Lam, Gwen Cardejon, Hōkūlani Holt, Howard Pe'a, Jerry Walker, Kalei Kanuha, Keoki Baclayon, Keola Chan, Kimo Alama Keaulana, Makana Risser Chai, Malcolm Nāea Chun, Malina Kaulukukui, Nerita Machado, Rubellite Kawena Kinney Johnson, Sean Puahi Chun, Thomas Kaulukukui and Wes Sen. In total, these *kūkākūkā*, or in-depth discussion via interviews, created 3,500 minutes of *'ike* (knowledge) and *na'auao* (wisdom). These experts shared illness narratives, differential diagnosis procedures and case studies that describe the successes of healing in their *'oihana*. They represented centuries of traditional knowledge and ancestral Hawaiian practice of *'ai pono* (balanced meal), *'ai kūpele* (therapeutic nutrition), *hāhā* (diagnosis by palpation), *hakihiaki 'iwi* (chiropractic's), *ho'ohāpai keiki* (conception of pregnancy), *ho'oma'ema'e* (cleansing), *ho'oponopono* (to set to *pono*, resolution), *hula* (dance), *kāula* (seer) or *kilo* (expert observation), *lā'au lapa'au* (medicinal plants and herbs), *lā'au kāhea* (instantaneous healing), *lau hala* (panadanus leaf used for plaiting), *lawai'a* (fishing), *lomilomi* (physiotherapy, massage), *ku'i a lua* (warrior art form), *mahi 'ai* (agriculturalist), *oli* (chanting), general work with *pōhaku* (sacred stones possessing *mana*) and *pūlo'ulo'u* (steam bath for illness).

Focus Group. Focus groups are a form of group interview with the advantage of facilitating a rich dialogue among research participants and are typically used to collect

qualitative data (Kitzinger 1995). In the discussion, participants can learn and build from one another's comments. For example, hearing something one participant says can be a springboard for another participant, revealing in-depth information about a concept, construct or program. Group interaction is a key component of the method (Kitzinger 1995). Focus groups are useful for exploring personal and group knowledge and for understanding experiences, often answering the how and why questions (Ibid). The participants' thoughts, ideas and perceptions are the primary data of qualitative research and can be gathered in various ways. Methods include semi-structured discussions, document or text review, and reflections from participants (such as *mo'olelo*). For this study, a semi-structured discussion guide and study background was provided before sessions began in order to maximize the time and energy within the space.

One focus group was conducted with twenty-five participants in *Ka Pā o Lonopūhā*, a cooperative learning community in Hawai'i with practitioners studying traditional customs, rituals and practices relating to *ola* through *lomilomi* and other traditional practices. Participants have cultural and historical knowledge about *ma'i*, its meanings and representation in their lives and communities as current cultural practitioners of traditional medicine. Pre-planning and post-analysis was performed with *Kumu* Keola Kawai'ula'iliahī Chan of *Ka Pā Lonopūhā* and his *Papa Lomilomi* (Hawaiian therapeutic massage class). Focus was on a grouping that would bring out cooperation and creativity more than conflict, competition, or a tendency to argue about whom or what is right. Groups were constructed in a way that would create a space where particular perspectives would best be given voice. Twenty-five intermediate level practitioners of *Ka Pā O Lonopūhā* came together in a focus group to discuss their *mana'o* (beliefs) for three hours in March 2016. Though their main *papahana* (topic) was focused on *ma'i* and *lomilomi*, their contributions included the same *'oihana* as the key informants, but included additional

categories and themes relating to the *ho‘ona‘auao* (education), *‘āina* (land), *kai* (sea water) and *wai* (fresh water). They are listed here in alphabetical order with permission and consent³: Frank Damas, Hi‘ilani Shibata, Ipolani Kiaha, Jackie Seeley, Joe McGinn, Jonathan Ching, D.Arch, Joylin Felix, Kalalena Ako, Kamakanui‘aha‘ilono Jingao, Kēhaulani Young, Kilo Akama, Kimi Little, Kristina Lacno, Leialoha Mahuka, Love Chance, Mahi La Pierre, Maleka Cook, Mālia Helelā, Marissa Wriston, Momilani Cheek, Nate Nakasone, Richard ‘Ōpūnui Storaasli, Ryan Izutsu, Samarha Lacy, and Yumi Sjoblom.

Richness in sharing and applicability were major outcomes to guide the overall formulation. For instance, category of *ma‘i ‘ano hou* was a major theme that originated from the qualitative data analysis procedures. In this respect, *ma‘i ‘ano hou* differentiate the study in terms of past or present and holistically include the future: *o ka wā mahope* and emerging illnesses and symptoms we should plan for now, for the next seven generations or one hundred eighty years. This category and its capturing of new sickness varieties will be explored in the next two years to come through publication of the forthcoming *Nā Ma‘i ‘Ano Hou ma Ka ‘Oihana Maui Ola: New Sickness Varieties and Emerging Indicators of Hawaiian Imbalance*. Additionally, there significant themes emerged that explored *nā ma‘i kuluma* and those chronic diseases unbalancing *kānaka ‘ōiwi* health in Hawai‘i today (Fox forthcoming, d). Detailed analyses to explore this area will be conducted in the near future.

Fifty participants will be reconvened to focus future translational research efforts on prevention in traditional practice, capacity building through training programs, outcome measurement in using Hawaiian methods and indicators, and creation of standards and tools that enhance integrative medicine in Hawai‘i. Policy and regulatory issues will also be addressed to

expand scope of practice for traditional and customary rights. In this way, participants are study contributors and their knowledge contribution to the preservation of these *‘oihana* and perpetuation through active practice must be protected as traditional and customary rights. The methodology in this study did not limit the *‘ike* contributed as “study participants” typically described in review board protocols.

Secondary Data Collection

It is through the use of archival materials that social, cultural and intellectual development can be examined in Hawai‘i by Hawaiian and Western sources. Because archival historical work is often unique to the end user and their access, when investigating these Hawaiian customs, rituals and practices of traditional Hawaiian medicine and *ma‘i*, *Kūkulu Ola Hou* went to great lengths to document the methods undertaken to reach the project aims and inventory inclusion. Here, each archive (physical or digital) and each collection (physical or digital) are recognized as different (Ramsey 2008). This research purposefully differentiated resources, the methods for access, and constraints making generalization difficult or successful for the team (Ramsey 2008). Research was conducted in a systemic and incremental way that both highlights the uniqueness of archival study and creates a breadth of knowledge required to create the inventory and taxonomy for public use. These first collections serve as the foundation of work for subsequent studies to build from: where regeneration looks to the past for a positive future outlook. Certainly, more collections exist; this work should be considered the *kahua* (foundation) to rebuilding the Native Hawaiian medical inventory.

It is critical to begin incorporating more explicit discussions, procedures and training manuals of primary research methods into our historical look at ancestral practices within the Hawaiian community, particularly due to the decrease in physical spaces and increase in digital

platforms in libraries, museums and record repositories. These could be successfully compared with secondary sources as this study details.

Papakilo Database. Papakilo Database is the ongoing development of a cutting edge and comprehensive “Database of Databases,” consisting of varied collections of data pertaining to historically and culturally significant places, events and documents in Hawai‘i’s history. This online repository of data is part of the Office of Hawaiian Affairs’ ability to preserve and perpetuate cultural and historical information. Partners with Papakilo Database, *Ho‘olaupa‘i* is a cooperative project within the Bishop Museum, which maintains hundreds of pages of scanned newspapers including articles, headlines and even advertisements. This is an ambitious attempt to make newspapers accessible to the public through the use of modern technology (Papakilo Database 2017). *Kūkulu Ola Hou* relied on this online meta-database to access the digital collections in a way that thoroughly documented evidence of *ma‘i* directly referenced in the collection.

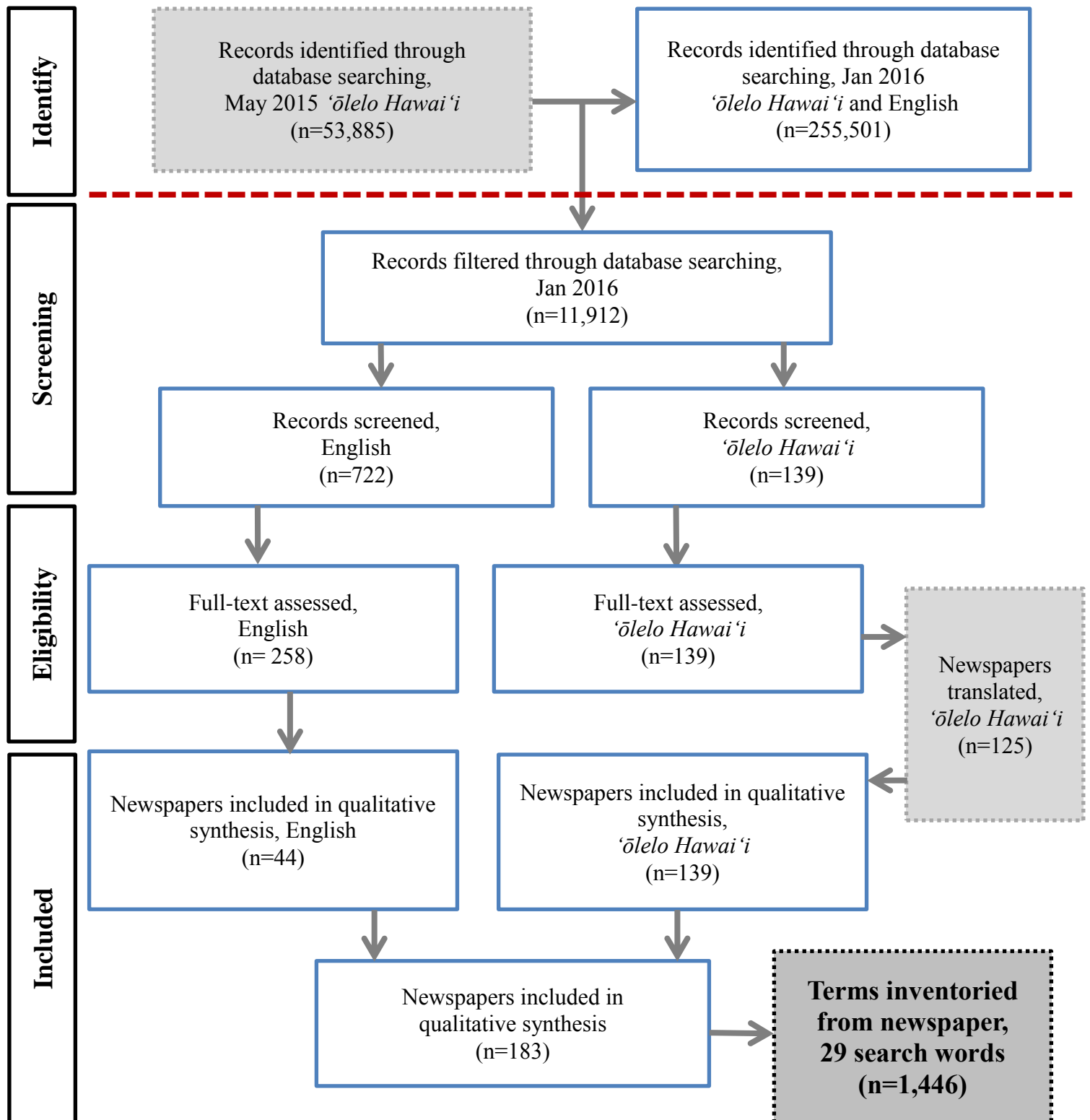
Utilizing the Papakilo Database, and initial keywords search of articles in the *nūpepa* was performed in both English and *‘ōlelo Hawai‘i*. In May 2015, thirteen search terms in *‘ōlelo Hawai‘i* produced an initial 53,885 yields. Seven terms in English produced 258 yields. Based on these results, all of the English terms were reviewed in their entirety. *‘Ōlelo Hawai‘i* findings were filtered using the database constraints. In January 2016, the search terms were recalculated, because new articles were loaded into the database and the collection was expanded. At the same time, an additional eight terms were added to create twenty-one total terms to search within the update content. This update produced 255,501 yields for review. Using database constraints again, we narrowed these immediately to 11,912 yields to begin sorting. Of those, 139 were found to be most relevant resulting in 125 articles translated and analyzed. The same update was

performed with the same English terms, increasing to 772 yields. Duplicating the database constraints, of those 772, some 539 were reviewed in total; 44 articles were found to be most relevant.

Those most relevant were reviewed, analyzed for relevancy and translated into English before findings were inputted in the inventory in both languages. Twenty-nine search terms were conducted. In total, 183 *nūpepa* articles were reviewed for this study, resulting in 1,446 terms evaluated and interpreted for inclusion. Great care was taken for the purposes of replication and documentation purposes. See Table 2.

The Bernice Pauahi Bishop Museum Archives. The Bishop Museum was founded in 1889 by Charles Reed Bishop in memory of his wife *Ke Ali'i* Princess Bernice Pauahi Bishop, the last direct descendant of King Kamehameha I. Bishop Museum is recognized as the principal museum of the Pacific, housing the world's largest collection of Hawaiian and Pacific artifacts and natural history specimens. Many of the archives are left unpublished and the majorities have not been reviewed for specific health research purposes. The selected collections give us a foundation of rich, multidisciplinary, multifaceted bodies of work not readily available in published books, manuscripts, journal articles or other accessible papers. Since this work aims to add to the scientific knowledge in the field of Native Hawaiian medicine and health, systemic methods of gathering evidence have been created. Case-studies and ethnographic research text and conversation analysis and cognitive, experimental and descriptive research are used as methods of location, recovery and research.

Table 2. PRISMA Flow chart of *Nūpepa* Records in Papakilo Database



The taxonomy of Hawaiian *ma‘i* will be built from evidence and archival inference. The four collections identified for this project phase constructed the overarching goal and documentation necessary as the basis for further development: a) *Pukui Medical Glossary*; b) *MS SC Handy Boxes*; c) *Hawaiian Ethnological Notes* (HEN); and, d) *Archives Catalog-Audio Collection*. Utilization of archival sources for taxonomy composition is time consuming and detailed oriented, but a critical process to support the creation of a new theory as described in *Kūkulu Ola Hou*.

Hawaiian Ethnological Notes (HEN). Hawaiian Ethnological Notes Collection, commonly called HEN, is comprised of Hawaiian language material, most of which was translated by Mary Kawena Pukui. This material includes articles that appeared in Hawaiian Language newspapers published between the 1860's to about 1940. Some articles were translated by Thomas G. Thrum. Other material is unattributed and would have come from various sources, possibly including verbal traditions. The HEN material must be accessed in-person, but efforts are underway to make publicly available.

The Queen's Medical Center. These make up thousands of pages, starting with the founding of the Hospital by Queen Emma and King Kamehameha IV in 1859. Within the *Hawai'i Medical Library Clippings Collection*, eight boxes were identified of importance for inclusion in future research. Of the *Queen's Historical Room and Heritage Collection*, 4,500 documents have been photographed, digitized, recorded, indexed and sorted. The archived documents were sorted into twenty-seven smaller collections reviewed and managed categorically. They included general topics like culture, history and letters, but more specifically *ma‘i malihini* (foreign diseases), *ma‘i ‘ula* (measles), *ma‘i lepera* (leprosy) and *puponika* (Bubonic plague; Black Death). Within these documents, we found 2,594 terms in English and

‘ōlelo Hawai‘i for input into the inventory. Of note, the terms here mostly used Latin words, and the records described medical terminology of all the other sources combined. This was expected given the detailed history of the hospital and the diligent record keeping entrusted by its founders and staff.

Hawai‘i State Archives. The mission of the Hawai‘i State Archives is to ensure open government by preserving and making accessible the historic records of state government and to partner with state agencies to manage their records. The Hawai‘i State Archives has been making digitized versions of collection materials since 2007, concentrating on the most requested material, indexes and fragile materials. Collections are updated and enlarged as digitization and indexing processes are completed. All Hawai‘i State Archives’ Digital Collection resources come from the holdings of the Hawai‘i State Archives (Papakilo Database 2017). Two collections were physically accessed: Jonah Kūhiō Kalaniana‘ole Collection (n.d.) and the Theodore Kelsey Collection (1891-1987). These collections include both hand written and typed papers in English and *‘ōlelo Hawai‘i*. There is occasional duplication with The Bernice Pauahi Bishop Museum Archives.

Personal Collections. Fifteen personal papers, books, manuscripts and notes were provided to the principal investigator from study contributors from their private collections. Some were duplicates of what was already being reviewed. However, their inclusion was novel, since they took the form of significance from the perspective of the practitioner.

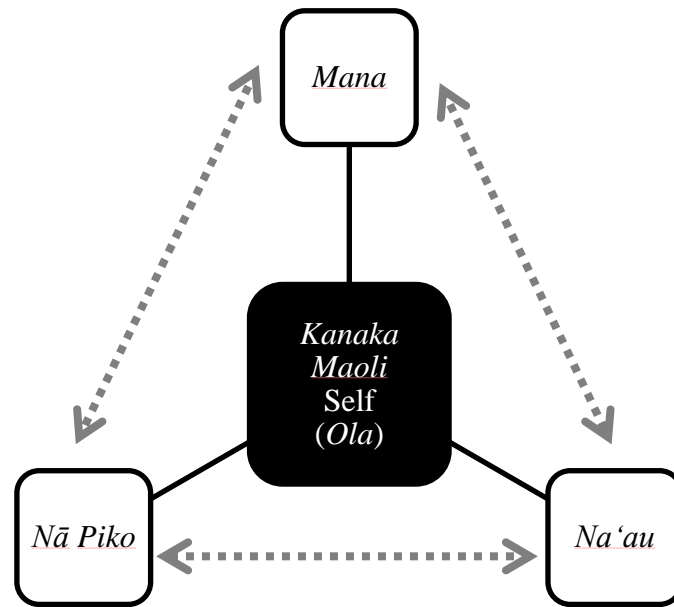
FINDINGS

Substantial evidence of traditional medicine among Hawaiians has been documented through this study, its process and research activities. Methods were thoughtfully used to integrate

conventional biomedicine with medical histories to classify *ma‘i* in ‘*ōlelo Hawai‘i* and situated socio-culturally. However ambitious, these findings attempt to modernize and update the way in which *ma‘i* are stored in our Hawaiian lexicon of medical, psychiatric and mental health terms (WHO 1994, 2016). Future work to validate this taxonomy may improve accurate diagnosis of culturally bound syndromes and target treatment that integrates traditional medicine to improve health outcomes for Native Hawaiians.

Hawaiians considered diagnosis important before establishing repentance to a specific deity, homage to an ‘*aumākua* (deified ancestors or personal gods) or *ho‘oponopono* with a disgruntled relative. However, the diagnosis was not always reached before treatment began. Rather, the process often starting with *pule* (prayer). Sometimes it took *kahuna* seeing a patient several times before they established an accurate diagnosis that could cure a *ma‘i*. A traditional Hawaiian medical practitioner always sought to find the underlying cause and used deductive processes to narrow the source of the *ma‘i*. For any *ma‘i*, there are likely underlying factors that need to be addressed in order to move beyond the presenting signs to the disease origins.

The Native Hawaiian medical inventory is both categorically broad and varies by practitioner or ‘*oihana*. Diagnosis is made from deduction of different sources through a series of presenting complaints or *hō‘ailona* (sign) and may differ sequentially in the etiology of the *ma‘i*. Themes indicate that these involve a spiritual dimension, relational discord and acts of negativity. Likewise, in order to balance these, treatment remedies should be recommended in progression for the patient to release the *ma‘i*. Therefore, a quantified inventory and classification system can aid the restorative process of *ola* to occur in a series that nurture one’s *na‘au* (gut; seat of emotion), realigns their three *piko* (representing one’s connection to past, present, future), and rebalances their *mana*.



(Blaisdell, 1991; Crabbe 2002; Crabbe & Fox 2016)

Figure 2. Native Hawaiian Cultural Identity Framework

Research conducted throughout *Kūkulu Ola Hou* indicates that this happens in cycles and should not overburden those who are *ma 'i* with too rapid of a treatment. The *kāhuna* process of curing happens with delicate balance of time and resources to avoid negative side-effects of new *ma 'i* to form.

In total, this study identified a total of 3,542 Hawaiian terms describing different sicknesses, illnesses, ailments and diseases. Another 3,468 terms described in English was also recorded from the same sources. Of these, 773 were initially recorded from the preliminary literature review. This far exceeded the primary estimation and prompted more sources to be identified for their relevance throughout the eight arms and eleven archives.

This original research has four areas of significance. First, simply to document knowledge of Hawaiian *ma 'i* to build a base for Hawaiian perceptions of illness, disease and ailment over time. The second is to make these study findings and data publicly available. The

capacity to compile this information, organize it in a usable way, and prepare it for the community as a collection gathering the rich traditions of Hawaiian medicine and health exists. As *kānaka ʻōiwi* who experience health needs, Hawaiian *maʻi* represent an important part of our history and *Ka ʻOihana Maui Ola*. *Maʻi* is balanced by *ola* and serve as a representation of imbalance within our *lāhui*. Yet, if we have the ability to observe, assess, identify and diagnose from a Hawaiian *kuana ʻike* (perspective) using Hawaiian *ʻike*, then an opportunity is borne. From that opportunity, the third significance was to envision improved diagnostic procedures for Native Hawaiian health informed by Hawaiian *maʻi*. This includes Hawaiian perspectives of imbalance, holistic integration or the spiritual life force that is the core essence of Hawaiian identity. Identity alignment is set forth, and the opportunity to create quality standards for culturally and linguistically appropriate services in Native Hawaiian health. In sum, these eleven archive collections, two methods of collection primary expertise in person, and dozens of literature reviewed create the baseline to build the inventory and corresponding taxonomic structure of Hawaiian *maʻi*. We estimate at least seventy-five distinct classes of disease, syndrome or condition are based from the highest subordinates of general *maʻi*.

Maʻi are presented in two distinct classes in the taxonomy: *maʻi kamaʻāina* and *maʻi malihini*. *Maʻi kamaʻāina* are illnesses that form existence pre-contact. Separate research publications will address those categories. *Maʻi malihini* are separate diseases that were introduced by foreigners to Hawaiʻi beginning in 1778 through the present day. These infectious diseases decimated the Hawaiian population in the nineteenth century and disconnected through generation entanglements with education, politics and economics. Generally, this taxonomy and the classifications will refer to *maʻi malihini* “foreign disease” (Luomala 1989:295) to describe

disease that are not *ma‘i kama‘āina* “native illness” to *kānaka ‘ōiwi*. *Ma‘i malihini* are presented as a sub order of *ma‘i* in the *Ka ‘Oihana Maui Ola*. A brief summary is offered here as a sample of the overall findings.

Table 3. Classification Differences of Hawaiian *Ma‘i*

<i>Ma‘i ma Ka ‘Oihana Maui Ola</i> (illness, disorder, disease, imbalance)	
<i>Ma‘i Kama‘āina</i> (traditional and native illness)	<i>Ma‘i Malihini</i> (foreign disease; introduced illness)

Ma‘i Kama‘āina, Traditional Illness

Ma‘i kama‘āina is native illnesses or indigenous disease (Heighton, 1971, Howard, 1979; Kamakau, 1991, Luomala, 1989). Differentiating *ma‘i kama‘āina* can be examined further as culturally-bound syndromes unique to Hawaiians, but not exclusively to their Polynesian ancestors. These *ma‘i* take the form of *ma loko* or *ma waho* (Fox forthcoming, a). Therefore, *ma‘i kama‘āina* represents the first level of stratification to further explore this area segmented from general *ma‘i*. *Ma‘i ma waho* and *ma‘i ma loko* represent subsequent divisions. *Ma‘i ma waho* is from external forces or “from outside” (Pukui et al. 1972a). Spiritual wellness factors that contribute to the *ma waho* concept are attributed to the *akua* (deities), *‘aumakua* (family god), *kupua* (demigod), *kupuna*, *lapu* (ghost) or *‘unihipili* (spirit of a deceased person) typically from one’s genealogical ties. *Ma‘i ma loko*, therefore, is internal or “from within” (Pukui et al. 1972a) and somewhat parallel to *ma‘i ma waho*. “*Ma‘i ma loko* was sickness from *loko*, “within.” “But not within the body. Within the family. Quarrels and holding grudges and *hihia* [ill feeling from unforgiven hostilities] and *hukihuki* [power struggle] and general unpleasantness in the family. All this caused sickness...” (Chai 2005: 48). The etiology of *ma waho* or *ma loko* was

once critical to determine the appropriate course of action by the *kāhuna*. Accurate assessment of *ma‘i ma waho* or *ma loko* illuminated much needed details about the condition.

June Gutmanis, noted researcher, writer and teacher in Hawai‘i, details *ma‘i ‘aumakua* in her book *Kahuna La‘au Lapa‘au, The Practice of Hawaiian Herbal Medicine* (1992) as “illness that comes from within and was the result of an offense against either an akua, ‘aumakua ‘one of the great gods, Ku, Kane, Kanaloa or Lono’, or an ‘ohana ‘aumakua (ancestral family god generally called ‘aumakua) or one of the kini akua (the multitude of gods, many of them lesser spirits)” (p. 21). As *ma‘i kama ‘āina*, these ‘*aumākua* were quite specific and required carefully constructed remedies that induced Hawaiian spirituality at the highest levels in medicine.

Ma‘i kino arose from natural causes (Bushnell 1993: 113, Handy *et al.* 1972: 142, Heighton 1971: 38, Howard 1979: 158, Pukui *et al.* 1972: 150) that Hawaiians knew to be effectively treated with *lā‘au lapa‘au*, *lomilomi* and other practices like *ho‘oma‘ema‘e* (Blaisdell 1991, Chai 2005), *ha‘iha‘i ‘iwi* or *hakihaki ‘iwi* ‘chiropractic care’ (Chai 2005: 24); *lā‘au nahā* ‘purgative’ (Blaisdell 1991: 2); ‘*ō‘ō* ‘bloodletting’ (Blaisdell 1991: 2, Chai 2005: 132-133, Kenn n.d. a: 22); *pahu* ‘surgery’ (Blaisdell 1991: 2, Kenn n.d. a: 22); *pūloholoho* or *pūlo‘ulo‘u* ‘steam bath’ (Blaisdell 1991: 2, Chai 2005: 142-146, Kenn n.d. a: 22), among many others with various terminology. *Ma‘i kino* remain *ma‘i kama ‘āina*.

These subordinate classes of taxonomy begin to fill in the specifics for *ma‘i* to edify the *Ka ‘Oihana Maui Ola* classification system.

Table 4. Traditional Hawaiian References to *Ma‘i*

<i>Ma‘i Kama‘āina</i> (traditional and native illness)		
<i>Ma‘i Ma Loko</i> (internal illness; from within)	<i>Ma‘i Ma Waho</i> (external illness; from outside)	<i>Ma‘i Kino</i> (naturally occurring illness)

Ma‘i Malihini, Foreign Disease

Ma‘i malihini is found directly in numerous sources defined in text as “introduced illness” (Howard 1971:120); “newcomer sickness” (Pukui, Haertig & Lee 1972b:95); “introduced disease” (Kamakau 1991:75) and several other variations. Howard (1979) uses *ma‘i malihini* and *ma‘i haole* interchangeably as “white man’s or visitor’s illness” (p. 158), as does Heighon (1971:119-120). *Kūkulu Ola Hou* choses to refer to *ma‘i malihini* to build the class of foreign diseases introduced to Hawai‘i and Native Hawaiians.

Pukui and Elbert (1986:307) refer to *pālaha*—a Hawaiian verb meaning to spread out or extend broadly—as a way to describe how the *ma‘i malihini* moved through humans, animals, plants and the physical environment. Therefore, the term *ma‘i pālahalaha* (Kawai‘ae‘a 1980a:26) takes on its meaning to define a classification for infectious disease interior to *ma‘i malihini*. “Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can be spread, directly or indirectly, from one person to another” (WHO 2017a).

Ma‘i Pālahalaha, infectious diseases that spread to greater devastation were then referred to as *ma‘i ahulau*. *Ma‘i ahulau* are true “epidemics” as we know them today (Pukui and Elbert 1986:8,221) that caused “*ahulau iholā nā kānaka i ka make*” (p. 221) or bodies heaped up.

Epidemics during the *mo‘ohihia* refer to an onset of a new disease in Hawai‘i, and later the increase in the number of cases of a disease (CDC 2012, Merriam-Webster, n.d. c). It is referenced several times across texts including Kamakau (1991:44), Kawai‘ae‘a (1980b:24), Kent (1986:209) and Pukui and Elbert (1986). *Ma‘i ahulau* assist us to further delineate *ma‘i malihini* as they arrived in Hawai‘i and add a classification scope that connotes their devastation on the health and well-being of Hawaiians. Midcentury epidemics of *ma‘i ‘ula* (measles) (Pukui and Elbert 1986:224), *palū* (influenza) (1986:313) and *kunu kalea*, (pertussis/whooping cough) (1986:208; 1986:183) are recorded as perhaps the three most deadly viruses to engulf Hawai‘i. One goal of this study is to reconstruct the most updated chronology of *ma‘i malihini* starting with the major *ma‘i ahulau*⁴ to contextualize the population collapse that corresponds to major socio-cultural-political-economic shifts. Disease terms embedded in that timeline convey a deeper story of entanglement.

Ma‘i pala a me ke kaokao (venereal diseases) (Chun 2008:2, Bushnell 1993:39, Kamakau 1991:109) or “sexually transmitted infections” (STIs) is well documented across sources. Beginning in 1778, social change in Hawai‘i is none more documented than *pala* (gonorrhea) (Pukui and Elbert 1986: 307) and *kaokao* (syphilis) (1986: 130). Furthermore, the “dramatic social changes that occurred following Western contact offers a unique opportunity to study the effects of social change on cultural values and their related coping behaviours” (Lee and Newton, p. 13). This includes details that pathology of *ma‘i malihini* affected *kāne* and *wāhine* or *keiki* (children) and *kūpuna* quite differently.

Generative lexicography of *ma‘i malihini* and the infectious disease that came to Hawai‘i was a necessary process over generations. Seven generations aided in the explicit or operational diagnostic criteria in *‘ōlelo Hawai‘i*. Though subjective to interpretation and clinical judgment

lacking in the nineteenth century, these terms and their descriptions are part of the ethnomedical tableau in Hawaiian health. These terms were developed with the goals of using them in written and oral communication and were incorporated into thousands of records during the kingdom and territorial periods. Early Hawaiian medical coding of *ma‘i malihini* represent a major step toward the attainment of a common language among missionary physicians and traditional Hawaiian medicine practitioners from earliest records of the arrival of infectious disease. However, classification agreement and mutual reference terminology was never achieved during the *mo‘ohihia* era. This study presents a retrospective analysis to reconcile those in order to create a more complete syntax provided by the classification and diagnostic criteria of foreign disease in Hawai‘i (Fox forthcoming, b). Furthermore, it is apparent that those tracking foreign disease in Hawai‘i wanted to have their own nomenclature of *ma‘i malihini*, specifically *ma‘i pālahalaha*. In order to accomplish this, each source and collection based their nomenclature on the terminology of what they documented, and then translated it into the Hawaiian language if no cognate existed.

Table 5. Hawaiian References to *Ma‘i* Integrated Post-Contact

<i>Ma‘i Malihini</i> (foreign disease; introduced illness)	
<i>Ma‘i Pālahalaha</i> (infectious disease)	<i>Ma‘i Kuluma</i> (chronic conditions)

RECOMMENDATIONS

Recommendations include additional data gathering, further data cleaning and research for practical use in the Native Hawaiian community. More data gathering might include collections not analyzed here. Priority is suggested to include more search terms for archival analysis in the

Papakilo Database and search in within the *nūpepa*; specifically at The Bernice Pauahi Bishop Museum where certain records need to be reviewed in person. We note that this research only captured a small sample of the knowledge that resides in their repositories. Additional oral histories might include speaking to more practitioners of specific *‘oihana*. As the inventory is further fine-tuned I intend to: 1) process the potential duplication of terms, b) create definitions that are not presently available for some English or Hawaiian terms, and, c) reconcile definitions for terms that conflict in either English and Hawaiian. Further research should work towards classification of a coding system to organize the inventory for ease in access. Terms should also be further organized according to appropriate signs and symptoms. I propose an advisory committee is created with *kānaka* experts of *hāhā*, *ho ‘oponopono*, *lā ‘au lapa ‘au*, *lomilomi* and *‘ōlelo Hawai‘i* linguistics, anthropology, biology, epidemiology, history, library science, medicine, psychiatry, psychology and religion.

SUMMARY

Beginning in January 2015, the *Kukulu Ola Hou* study started with comparative research methods to capture documentation from primary and secondary sources that showed evidence of Hawaiian *ma ‘i*. The science process alone found more than 700 terms as a pilot sample to launch a full mixed-methods study. To compile the customs, rituals and practices to contextualize what Hawaiian *ma ‘i* meant for their classification and reliability should not be solely text-based.

An inventory of this nature requires further hypothesis testing, observations through data collection and confirmation via data analysis, while harnessing the knowledge and experiences of contemporary practitioners in traditional Hawaiian medicine. Key informant interviews with

advanced specialists from Hawaiian history, culture and health practices, and a focus group with intermediate practitioners who are still acquiring their knowledge in this field, were identified as critical to derive data via discussion—or the Hawaiian form of *kūkākūkā*. This assisted in the formulation of the taxonomic structure and how the *ma‘i* are classified, especially those that were *ma‘i kama‘āina* versus *ma‘i malihini*.

As the *kahua* to lifelong work to rebuild the rigor of *Ka ‘Oihana Maui Ola*, this research used primary sources to connect the customs, rituals and practices relating to Hawaiian *ma‘i* beyond translation of terms. By creating this Native Hawaiian medical inventory and reconstructing its taxonomy, *Kūkulu Ola Hou* is one step toward rebuilding Native Hawaiian health by reconnecting ancestral practices of traditional Hawaiian medicine. Traditional and integrative medicine is used around the world, not only to treat diseases, but especially chronic diseases. It is also widely used in disease prevention, health promotion and health maintenance, and has proved to be cost-effective for some governments (WHO 2013, Wolever 2012). This might be most true for addressing mental health to support unique cultural, racial and ethnic health interests such as Native Hawaiians ((US), Office of the Surgeon General, Center for Mental Health Services (US), and National Institute of Mental Health (US) 2001, Canino and Alegría 2008). Like the ICD, DSM or Merck Manuals, the Native Hawaiian medical inventory and its taxonomy of *ma‘i* has significant implications for use, which includes monitoring incidence and prevalence of diseases, observing reimbursements and resource allocation trends, and keeping track of safety and quality guidelines. These two outcomes also include opportunities to manage Native Hawaiian culturally specific data on diseases, injuries, symptoms, reasons for encounter, internal factors that influence health status and external causes of conditions.

This study generated an evidence-base for further empirical investigation of Native Hawaiian health to reconnect to its ancestral practices of traditional medicine by creating Hawaiian methodologies using *‘ōiwi* perspectives. To achieve greater well-being for *kānaka maoli*, clinical research should advocate for empirical investigation that address health disparities based on causal pathways: social, ecological, environmental and behavioral styles. Hawaiian *ma‘i* provide an epistemological context of pathologies that are culturally shaped and enable us to examine the links between culture, history and biological disease. Together, these all shape illness. If health scientists want to know how cultural shifts can cause, treat or cure illness among Native Hawaiians, then systematically studying *ma‘i* within their emic taxonomy will likely help clinicians and practitioners alike.

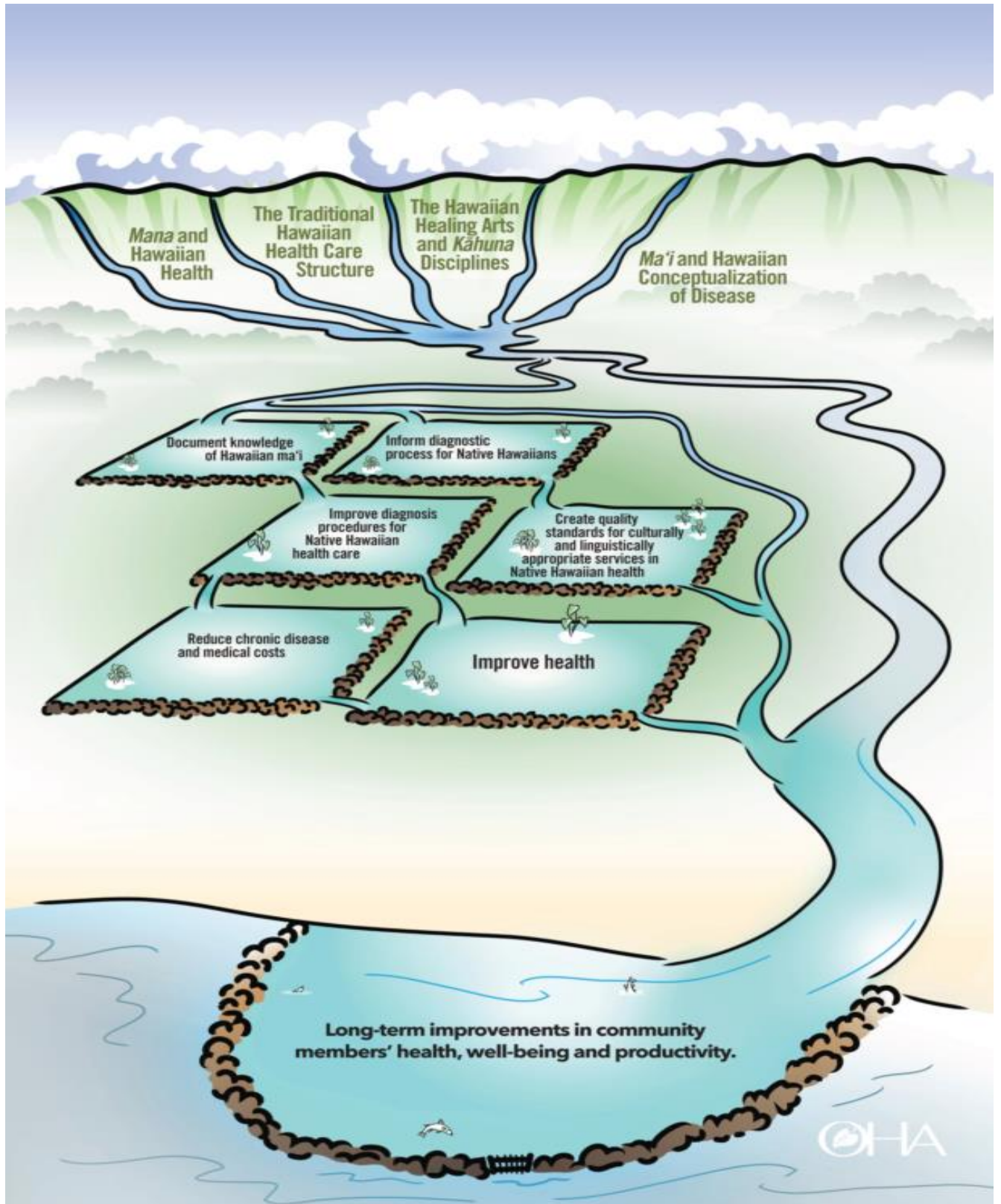


Figure 3. *Maui Ola Loa*: Hawaiian Heuristic to Envision *Ka 'Oihana Maui Ola*

KŪKULU OLA HOU

**Rebuilding Native Hawaiian Health by Reconnecting
Ancestral Practices of Traditional Medicine:**

An Inventory of Researched Customs, Rituals, and Practices Relating to Hawaiian *Ma'i*.

Kealoha Fox, ABD, MA

PhD Dissertation, Final Oral Defense

At Ka'ākaukui ♦ Honolulu ♦ Kona ♦ O'ahu

On March 13, 2017 ♦ Kulu ♦ Nana ♦ Ho'oilō

University of Hawai'i at Mānoa

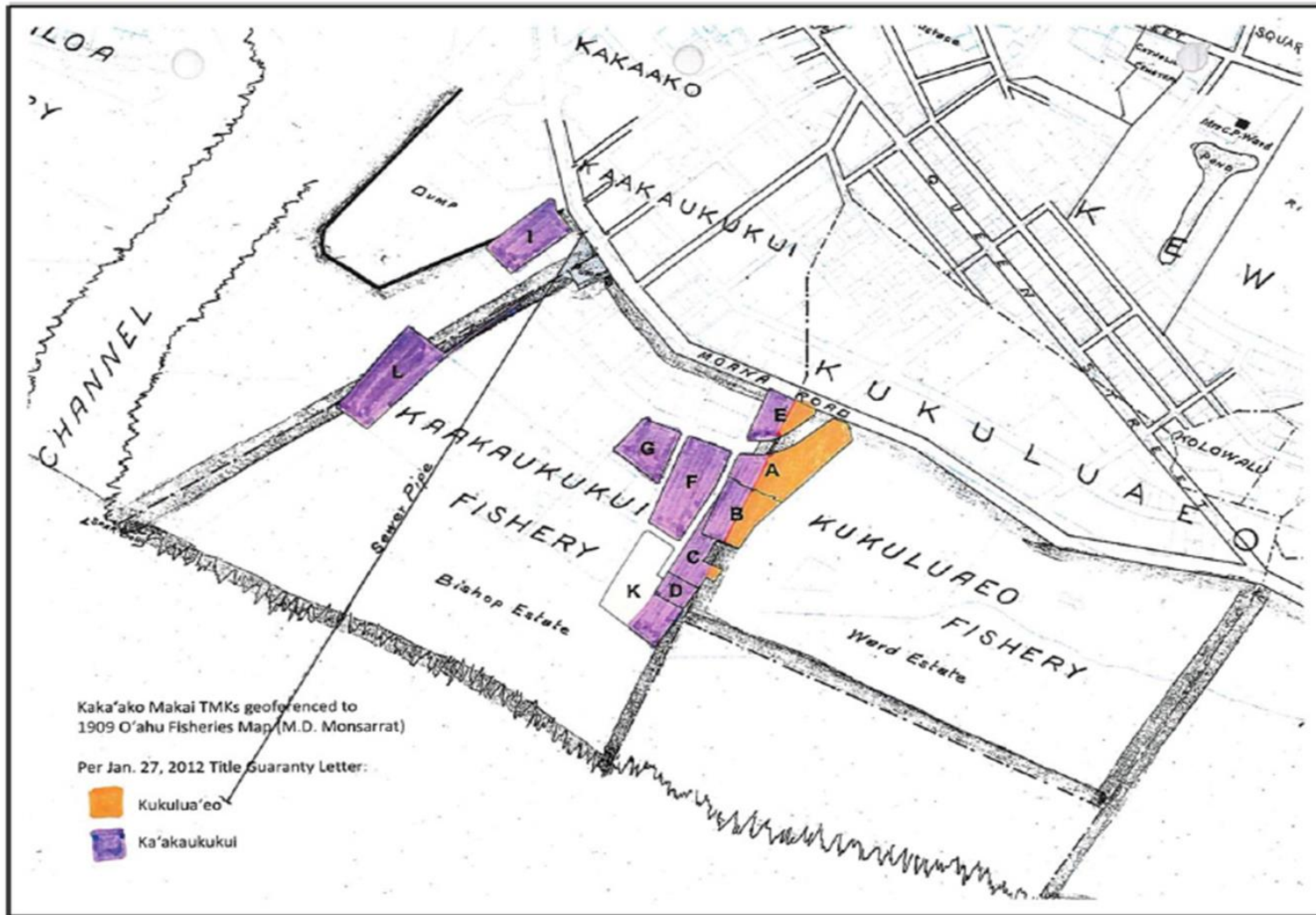
John A. Burns School of Medicine

Department of Complementary and Integrative Medicine

Clinical Research Program



WELINA



Source: Monserrat, 1909 and OHA, 2012

OUTLINE

Kūkulu Ola Hou

Statement of the Problem

Study Design

- Initiation
- Research Question and Specific Aim
- Assumptions and Gaps
- Phases

Theoretical and Analytical Framework

Sources

Findings

- Ma'i Kama'āina
- Ma'i Malihini
- Inventory
- Taxonomy
- Summary

Next Steps and Future Work

Recommendations

Challenges for PI

References

Acknowledgements

Questions, Comments and Discussion

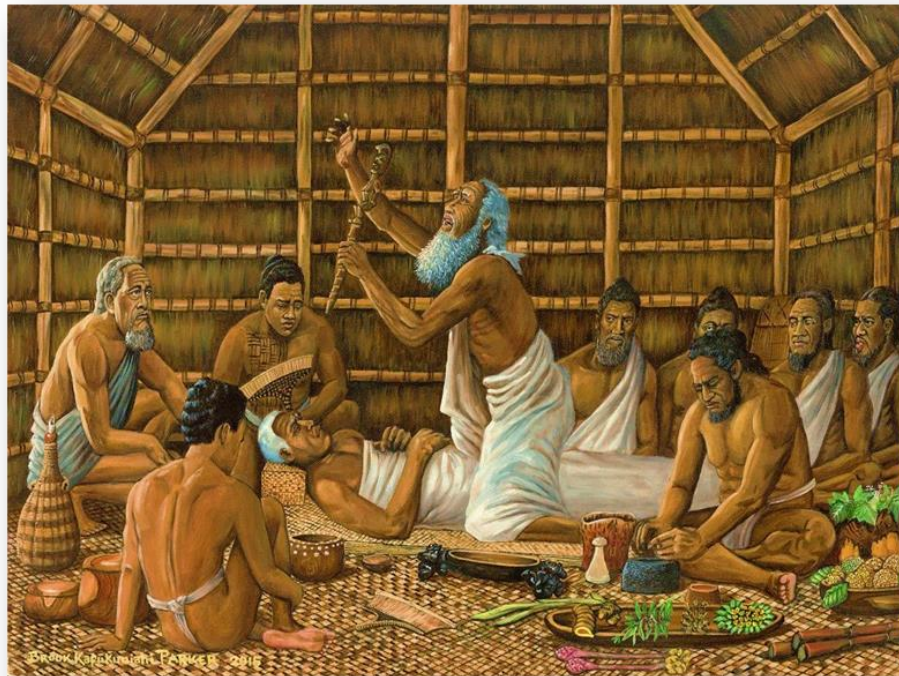
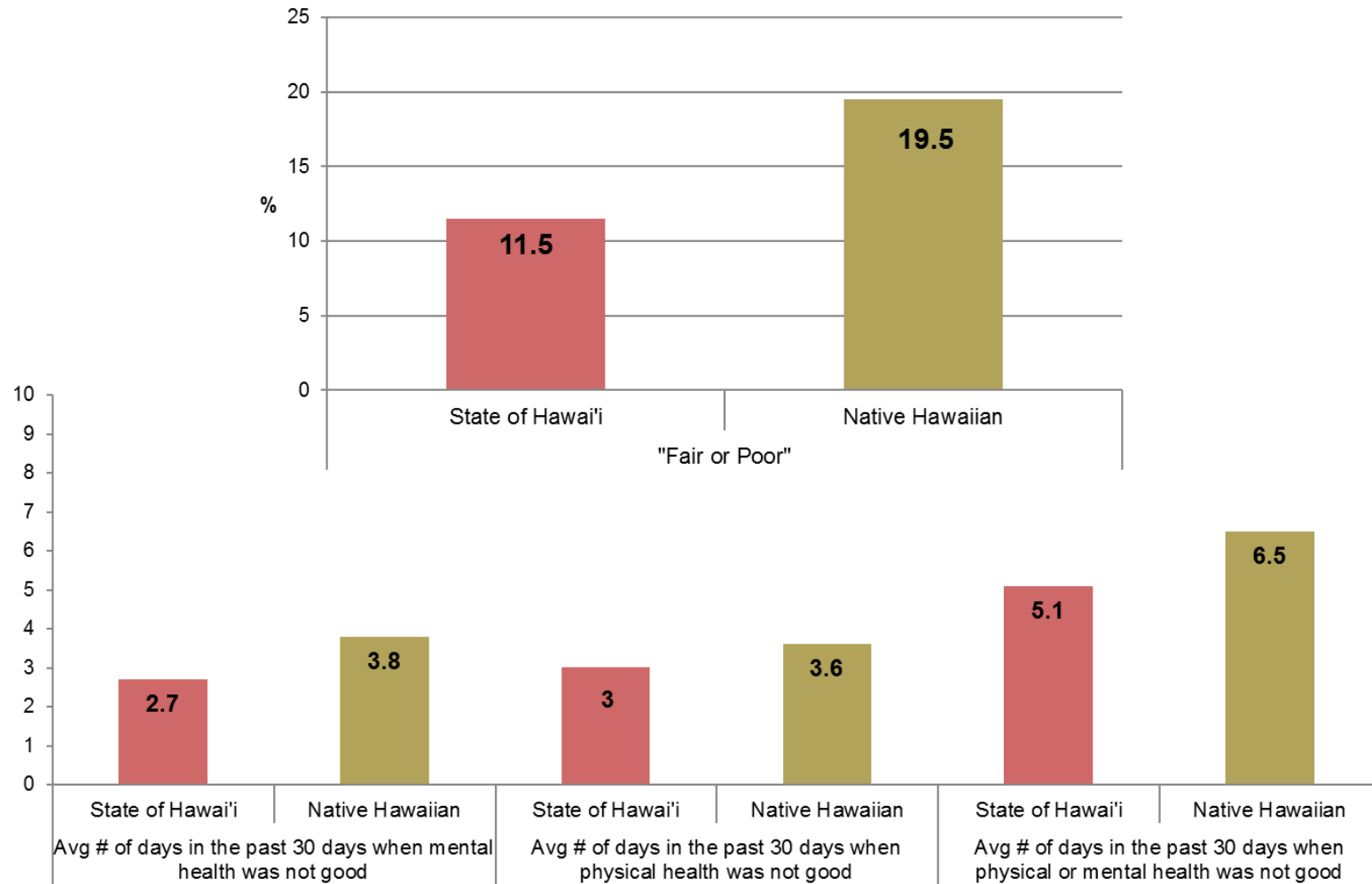


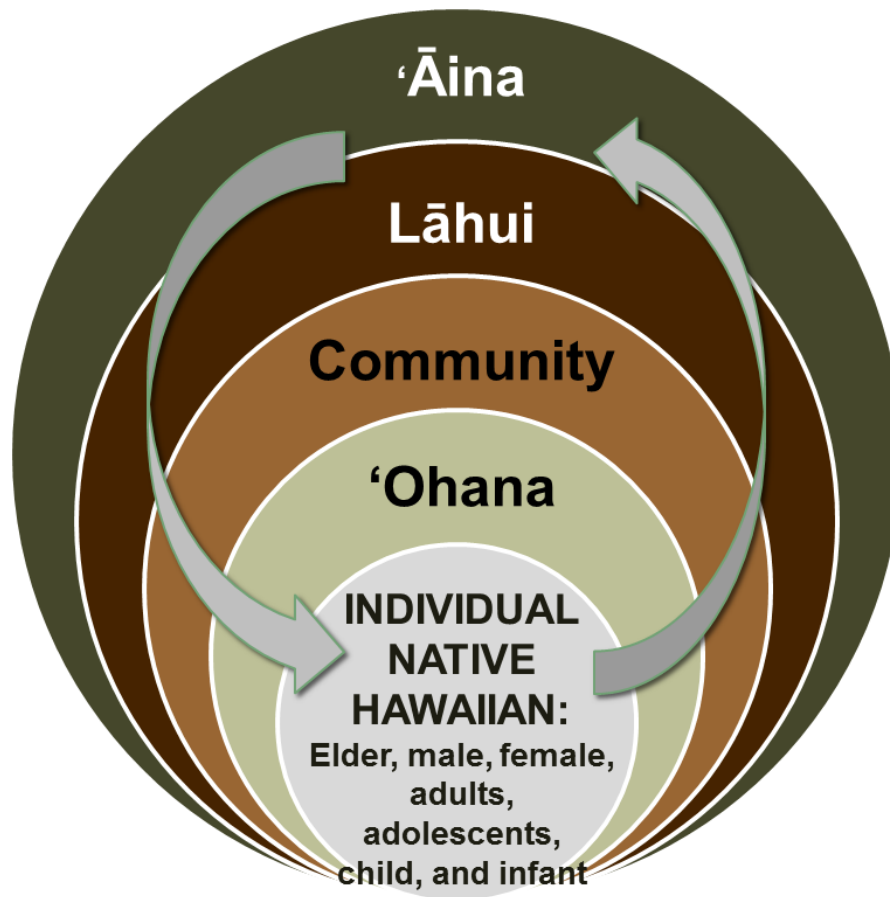
Image © Brook Kapūkuniahi Parker

STATEMENT OF THE PROBLEM

General Health Status State of Hawai'i BRFSS 2014



What is Hawaiian well-being?



This model examines each of these arenas in relation to achieving and sustaining Kānaka 'Ōiwi well-being.

Source: McGregor, D., Morelli, P. T., Matsuoka, J. K., Rodenhurst, R., Kong, N., Spencer, M.S. (2003)

STUDY DESIGN

NĀ POUKIHI: DETERMINANTS OF KĀNAKA 'ŌIWI HEALTH Ka 'Ai Pono (Kānaka 'Ōiwi accessing healthier lifestyles)

OUTCOMES

Activities	Short-term (1-2 years)	Medium-term (3-5 years)	Long-term (>5 years)
• Public Education Initiatives re: health lifestyles	<ul style="list-style-type: none"> Develop healthy lifestyle public education (PE) campaign Identify funding sources to support PE campaign 	<ul style="list-style-type: none"> Targeted campaign to include mass media, social marketing & messaging 	<ul style="list-style-type: none"> Ongoing healthy lifestyle PE efforts
• Increase access to healthy foods	<ul style="list-style-type: none"> Identify existing sources of affordable healthy food options 	<ul style="list-style-type: none"> Cultivate relationships between food production & NH health service organization Encourage food production by families 	<ul style="list-style-type: none"> Affordable healthy foods are accessible to all
• Increasing physical activity	<ul style="list-style-type: none"> Identify successful physical activity & healthy lifestyle programs for youth & adults 	<ul style="list-style-type: none"> Develop sustainability plan for physical activity programs 	<ul style="list-style-type: none"> Widespread implementation of best practice physical activity programs for youth & adults
• Improve psychological well being of Native Hawaiians	<ul style="list-style-type: none"> Identify successful programs that support NH psychological well being (prevention, strength-based programs, & interventions) 	<ul style="list-style-type: none"> Develop sustainability plan for NH psychological well being Conduct outcome research on promising psychological well being programs 	<ul style="list-style-type: none"> Widespread implementation of best practice psychological well being programs
• Decrease reliance on alcohol, tobacco, & other drugs (ATOD)	<ul style="list-style-type: none"> Identify successful ATOD prevention & treatment programs for NHs. Assess gaps in services Convene stakeholders to map plan for addressing ATOD among NHs 	<ul style="list-style-type: none"> Secure funding for ATOD services for NHs Outcome research on ATOD prevention & treatment programs with NHs 	<ul style="list-style-type: none"> ATOD prevention & treatment services for NHs are community-based, integrated within health care system, & successful in supporting recovery

HEALTH SERVICES

<ul style="list-style-type: none"> Include Traditional Health Services in the Health System Create a continuum of NH Health care incl. community & land-based programs, preventive care, clinic-based health & behavioral health care, & tertiary services Increase community-based Interventions Increase comprehensive, holistic, integrated, family centered clinic-based Interventions informed by NH values, & 	<ul style="list-style-type: none"> Convene meetings with TH Include Traditional Healers in the Health System Increase awareness of traditional healing arts Increase culturally competent doctors & health care staff Increase knowledge of Native Hawaiian illness, ma'i Identify community partners, priorities, & funding for full continuum of care Identify realistic best practices 	<ul style="list-style-type: none"> Develop plan of TH inclusion Integrated health education models of traditional healing & western care throughout health care & educational system with culturally tailored programs focused on increase the number of practitioners trained in: (Cross training/dual trained might also be helpful) Implement a community based care program that spans full continuum Utilization of best practices by CHCs/ 	<ul style="list-style-type: none"> Implementation of TH inclusion plan Increase integration of western models with traditional prevention & management strategies Widespread dissemination of community based care program spanning continuum of care (including neighbor islands) Best practices standard for usual care
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STUDY DESIGN

Research Question

What are Hawaiian conceptualizations of *ma'i* (illness and disease)?

Specific Aim

Conduct research that deepens our understanding of what *ma'i* means in contemporary traditional Hawaiian medicine by performing comparative analyses reconnecting ancestral practices to historical knowledge.

STUDY DESIGN

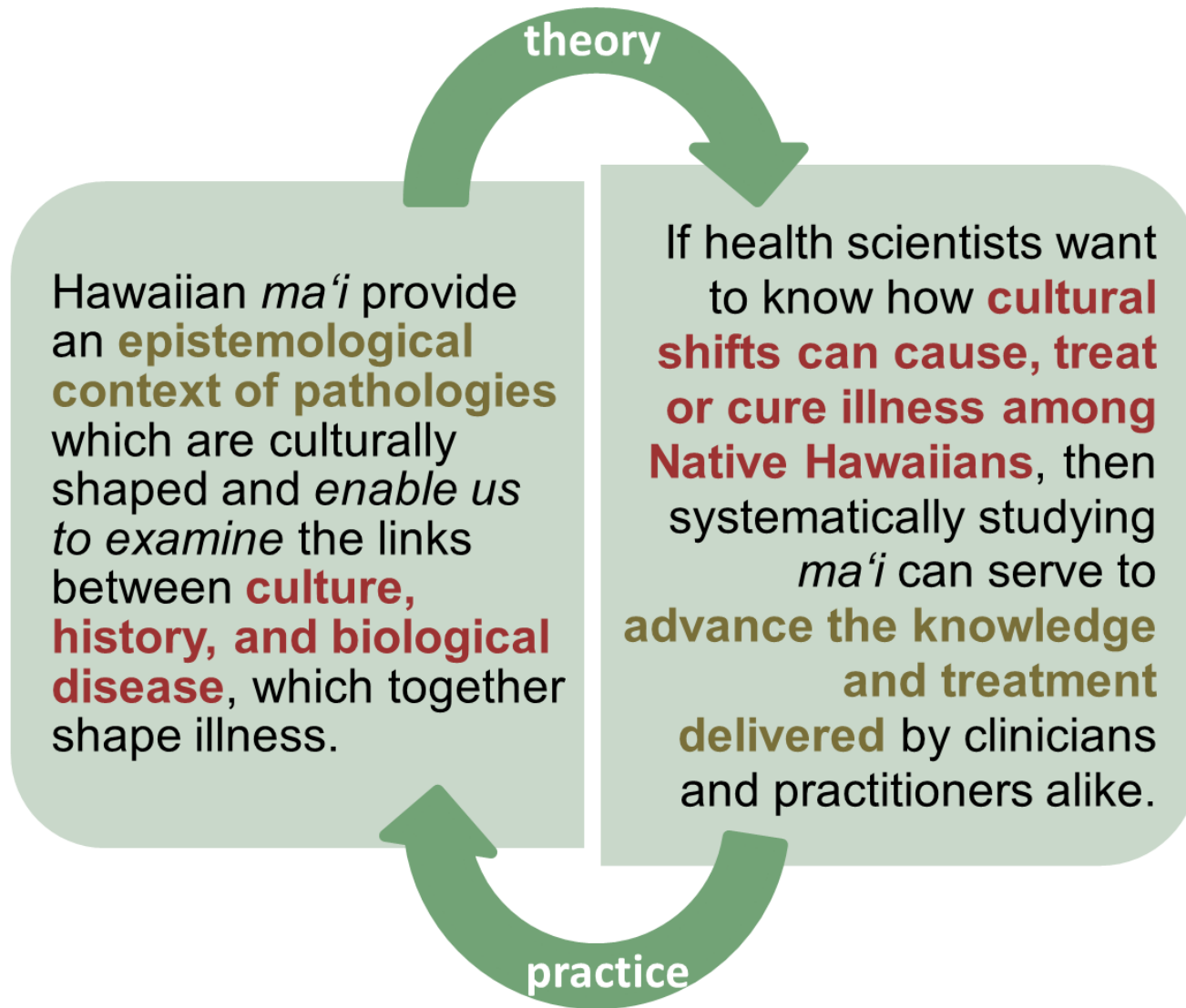
	Theory	Methods	Data	Participants
ASSUMPTIONS	<p>Medical ethnohistories suggest a deep and rich philosophy of health and sciences uniquely embedded within the ancient practices of <i>kānaka maoli</i>.</p>	<p>There is a clear systematic process to achieve the desired outcome of study</p>	<ul style="list-style-type: none"> Standard data collection, curation, and analysis Research data management Access to data 	<p>Access to traditional medicine experts</p> <p>Informal, semi-structured format is a good approach</p>
GAPS	<p>Sources were selected to explicate the findings across time using the Kūkulu Hou framework</p>	<p>Methods were deployed for each research arm, or by collection within the source</p>	<ul style="list-style-type: none"> Non-standard format Missing data Gatekeeping 	<ul style="list-style-type: none"> Availability Health Time Role of the PI

Phases of Study

Phase 1	Initial literature review, protocol development, creation of study plan
Phase 2	Preliminary planning with human participants, study authorization by the University of Hawai'i at Mānoa IRB
Phase 3	Gain support: <i>Nā Limahana o Lonopūhā Native Hawaiian Health Consortium</i> , traditional Hawaiian medicine practitioners
Phase 4*	Recruitment and Schedule of Key Informant Interviews and Focus Group Discussion
Phase 5*	Process of exploratory, discovery, collection, interpretation, and data analyses
Phase 6	Review of Inventory and feedback for publication and dissemination
Phase 7	Presentation and publication of findings

*Secondary data collection and analysis occurred concurrently of Phases 4 and 5.

STUDY DESIGN



Kūkulu Hou Framework

<i>O Ka Wā Mamua</i>	<i>Ka Mo'ohihia</i>	<i>O Kēia Au</i>	<i>O Ka Wā Mahope</i>
The Historical and Cultural Context of Well-being Among Kānaka 'Ōiwi	The General Entanglements of Kānaka 'Ōiwi as Historical Linkage to the Past	Contemporary <i>Ma'i</i> as an Indicator of Imbalance Among Kānaka 'Ōiwi	The Future Relationship and Context of Well-being Among Kānaka 'Ōiwi

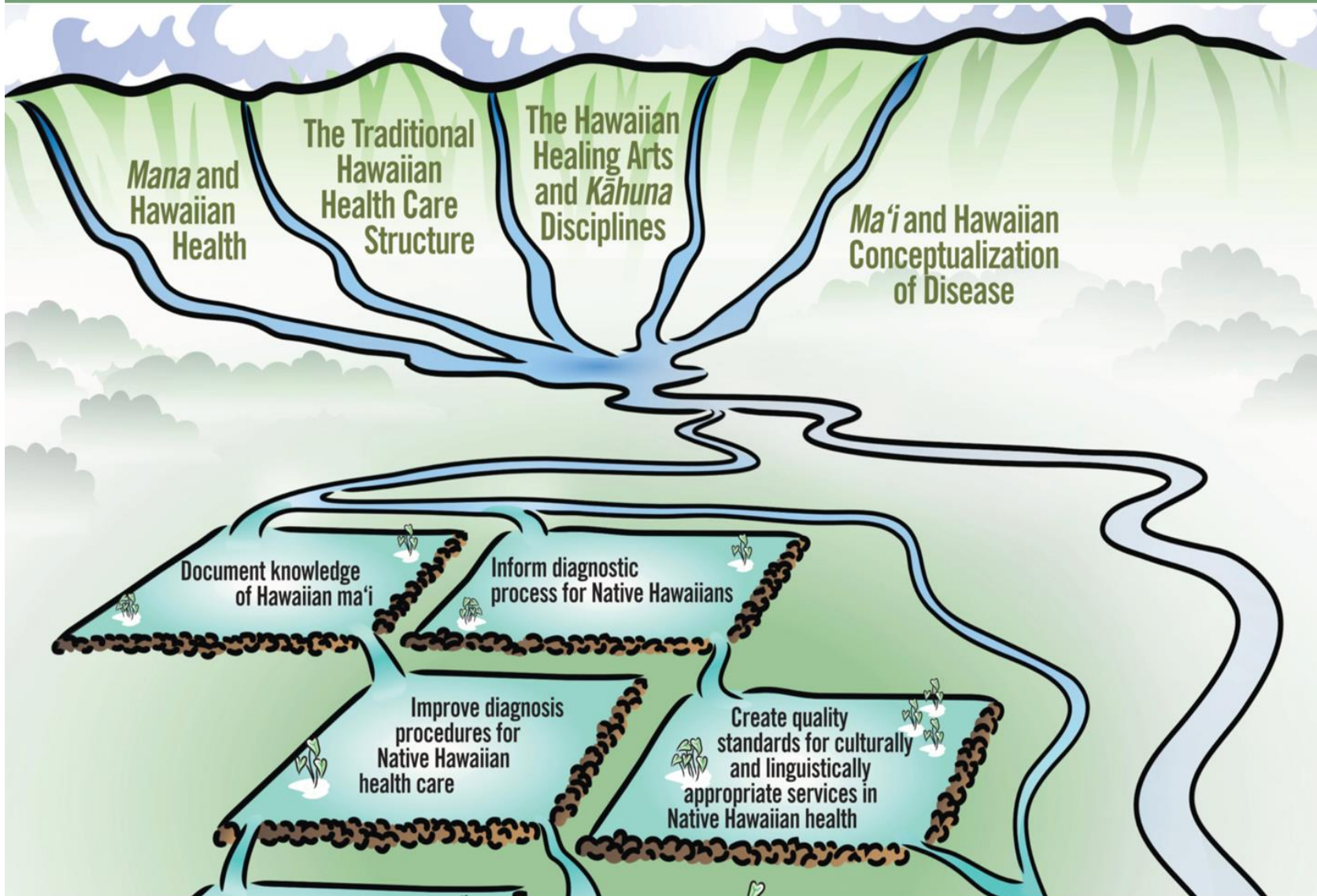
The Transdisciplinary Theory Used For Hawaiian Research Development

Ua lehulehu a manomano ka 'ikena a ka Hawai'i.
Great and numerous is the knowledge of the Hawaiians.
(Pukui 1983 #2814).

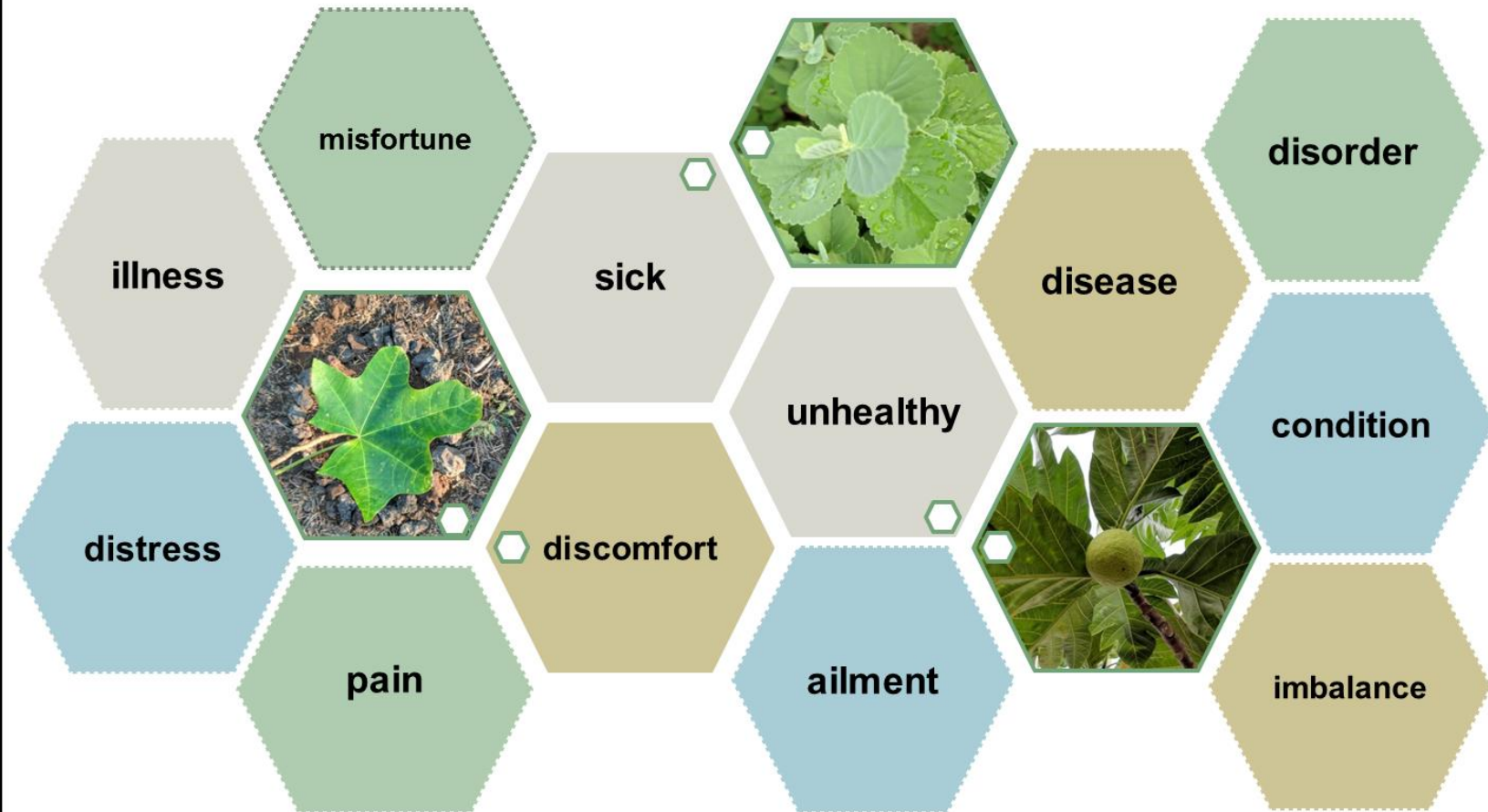
SECONDARY DATA SOURCES



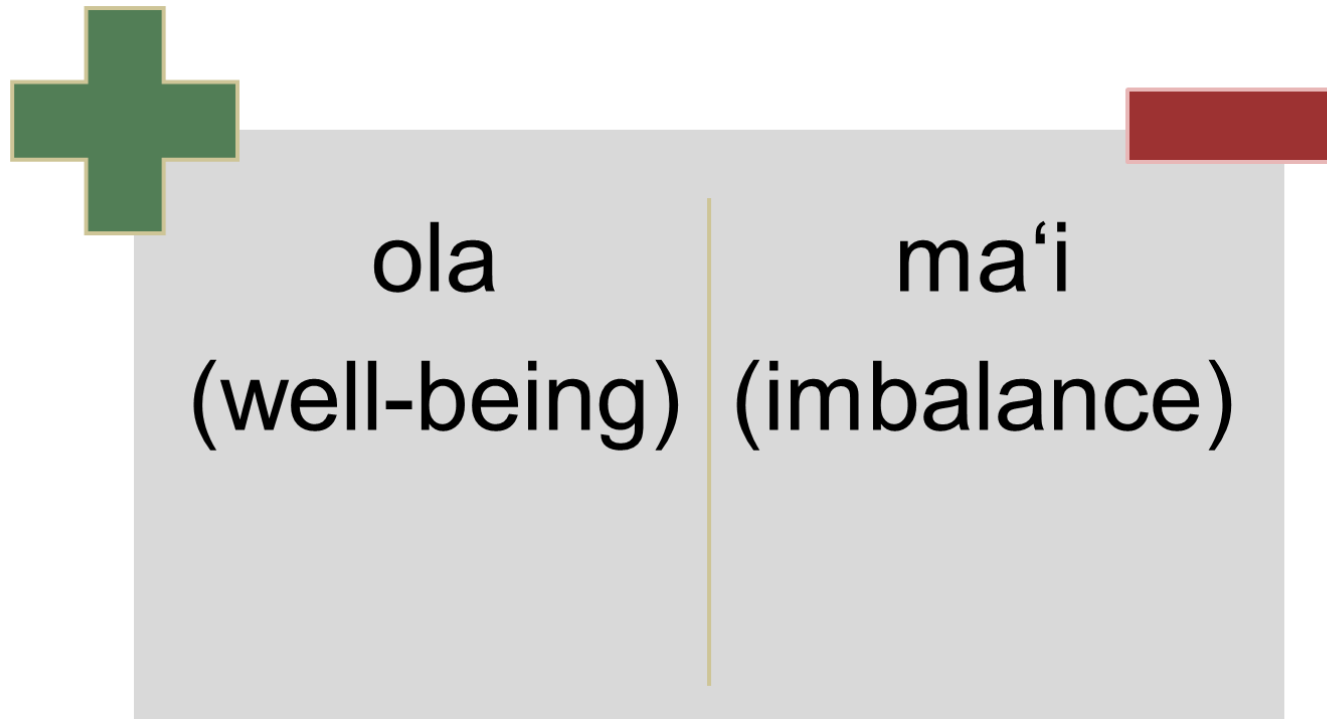
APPROACH



What are Hawaiian *Ma'i*?



APPROACH



SOURCES

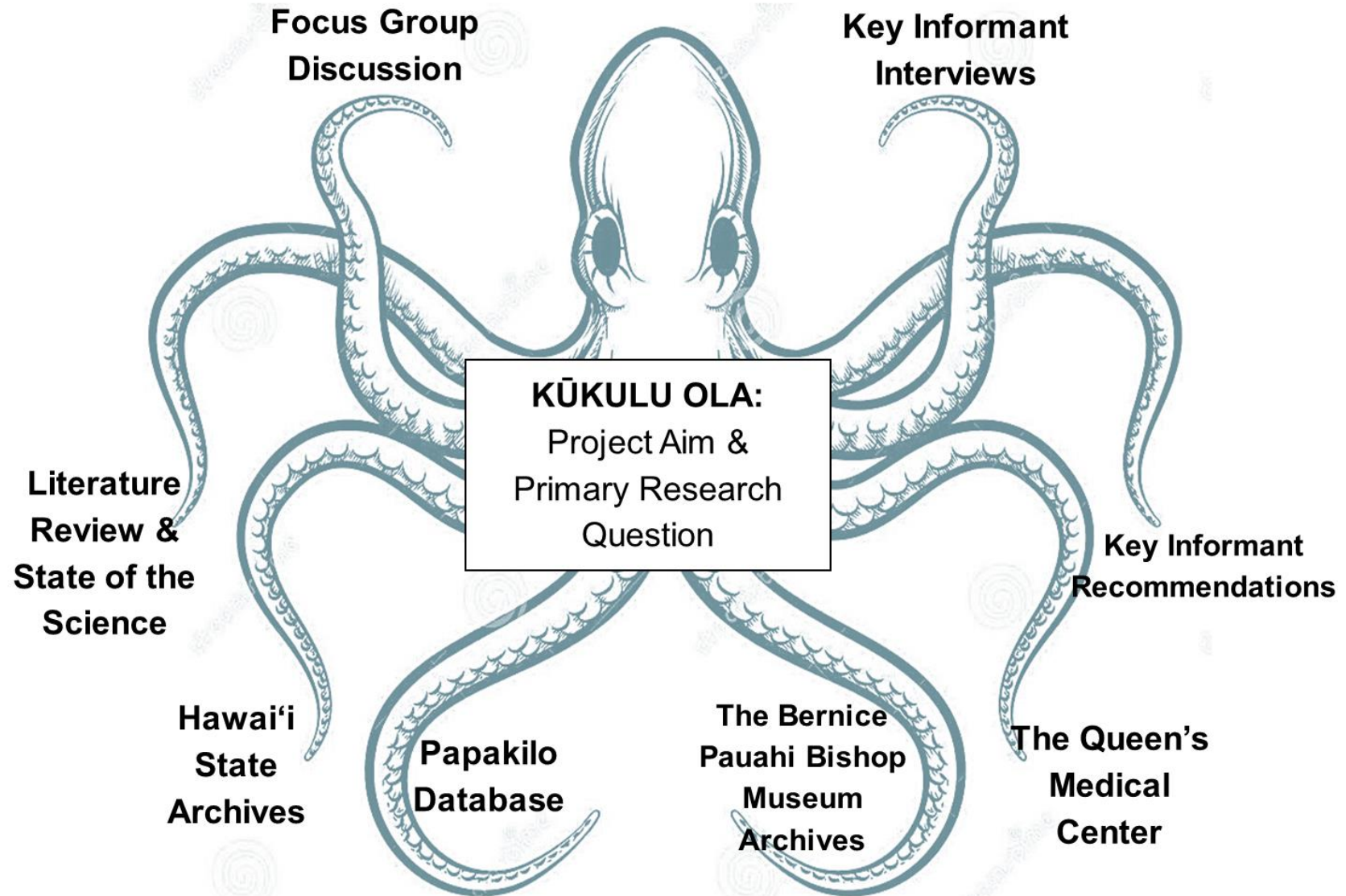
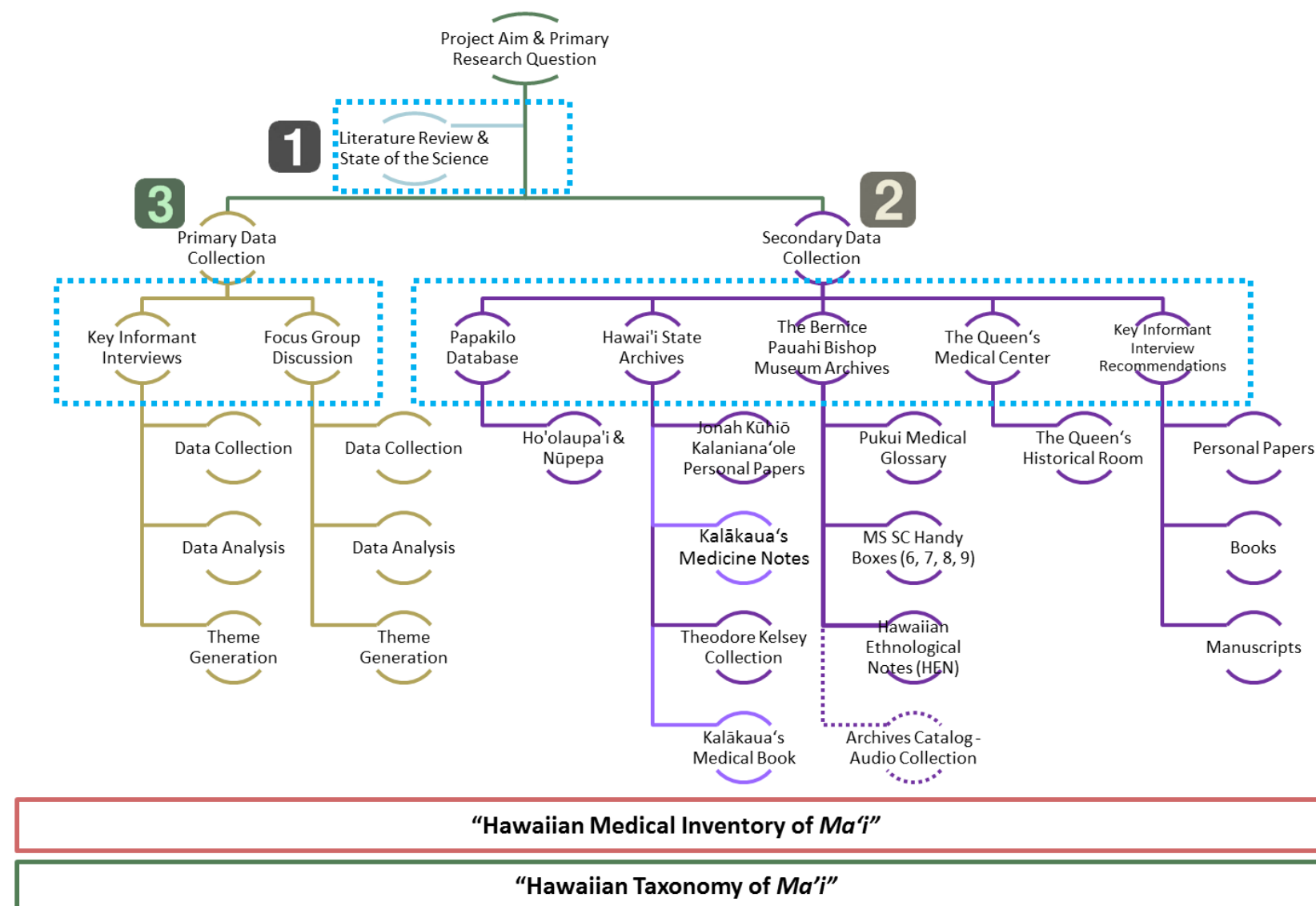


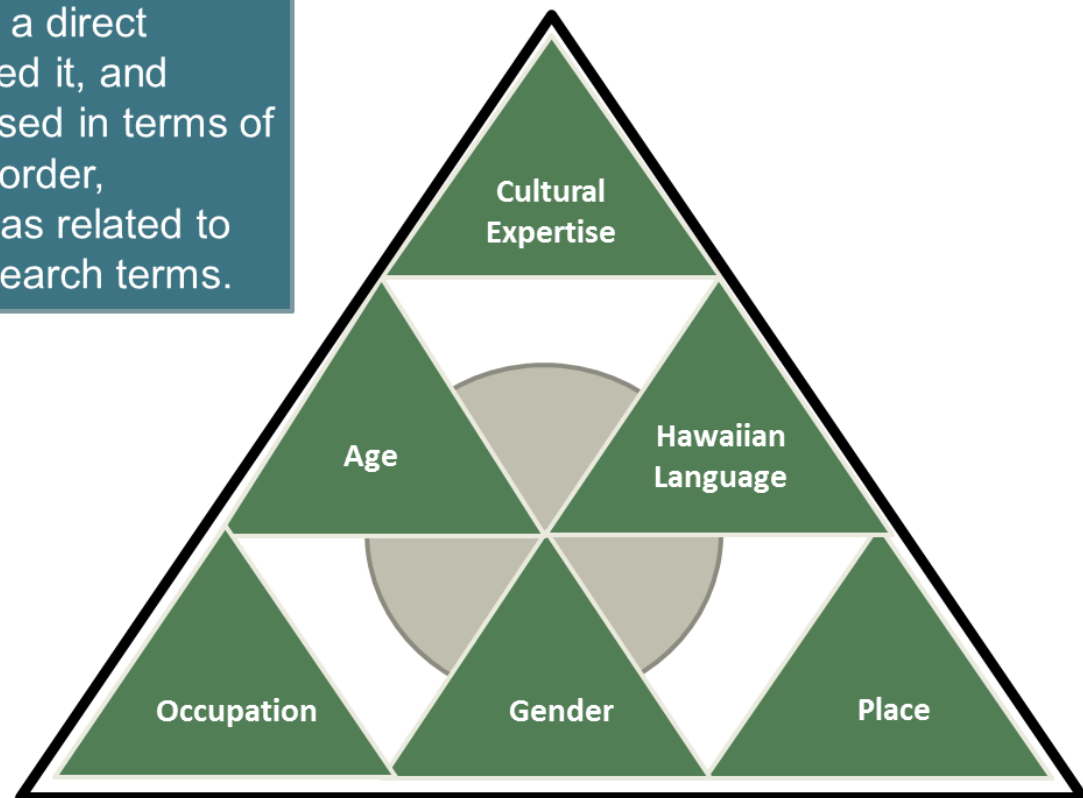
TABLE 1. Flow chart of Kūkulu Ola Hou Sources



PRELIMINARY ANALYSIS & LITERATURE REVIEW

Categorized references according to four primary characteristics:

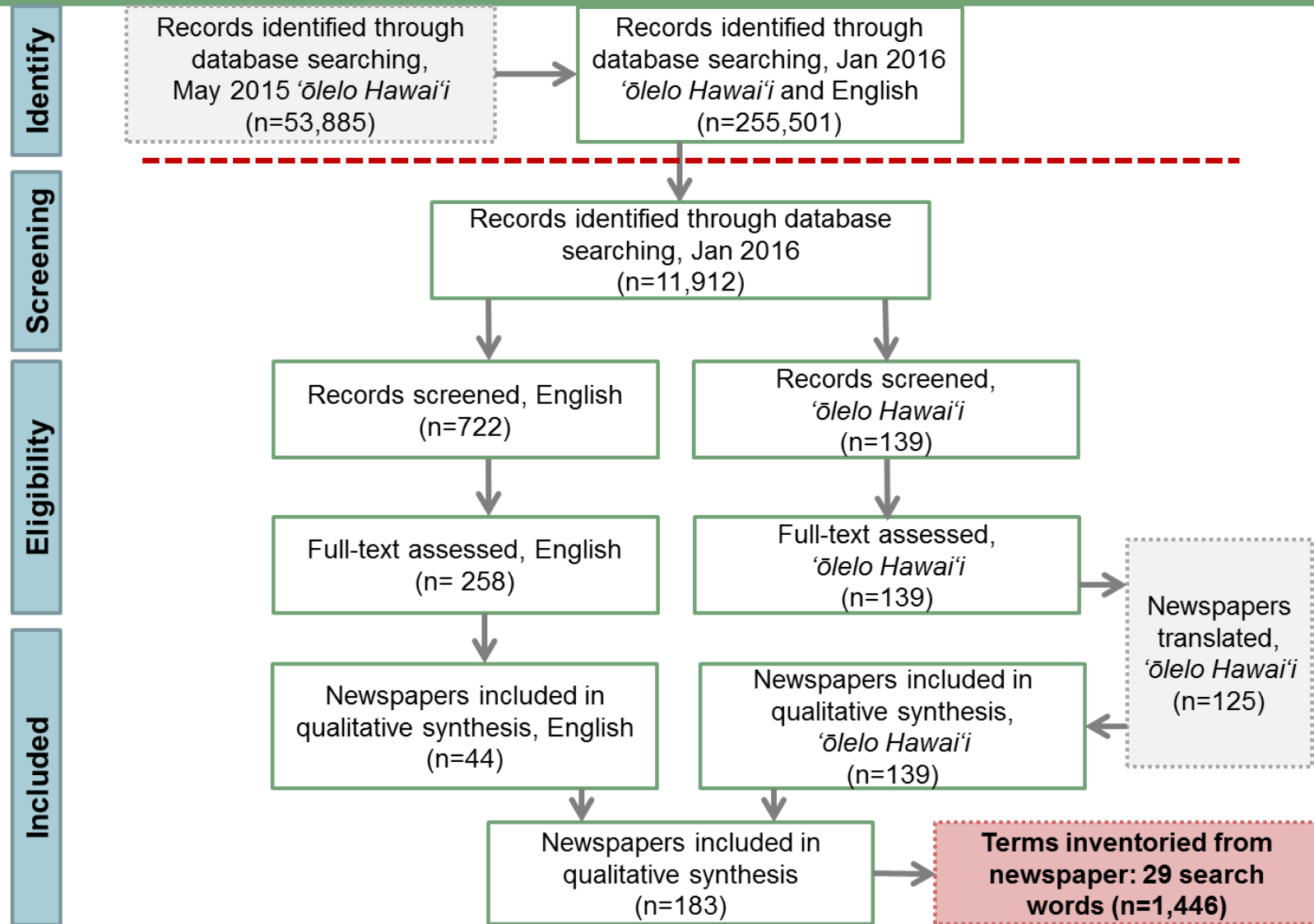
- (1) whether the focus was Hawaiian *ma'i*,
- (2) the time period to which the piece was referring (if applicable),
- (3) whether the author made a direct reference to *ma'i* or defined it, and
- (4) whether *ma'i* was discussed in terms of characterizing illness, disorder, pathology, or disease, or as related to the health symptoms of search terms.



Papakilo Database – Nūpepa Search						
Keyword Search						
Search Term	Search Yields	Refined search yield	Source Information			
	#	#	Name of Papers	Section Title	Page Number	Relevant Excerpt
‘ōlelo Hawai‘i						
ma‘i	230,212	72				
ma‘i kama‘aina	36	10				
ma‘i kino	150	11				
ma‘i aumakua	3	2				
ma‘i paaoao	34	19				
ma‘i+haikala	75	8				
ma‘i ho‘opa‘i	60	6				
ma‘i hoinoino	42	8				
ma‘i mawaho	761	4				
ma‘i maloko	2,346	16				
ma‘i ma waho	16	1				
ma‘i ma loko	26	3				
ma‘i malihini	45	15				
ma‘i haole	68	11				
ma‘i lepera	4,278	N/A				
ma‘i kuluma	112	-				
ma‘i palahalaha	0	0				
ma‘i ahulau	1,118	26				
ma‘i lele	1,666	16				
ka‘a ma‘i	3,622	-				
Total	254,844	139				
English						
Illness	24	3				
Disease	189	15				
Sickness	24	0				
Symptom	0	1				
Disorder	21	1				
Epidemic	17	3				
Infection	12	5				
Other	370	16				
total	657	44				
	255,501	183				

Ke Aloha Aina, 20 June 1896 [Page 7]
Mo‘ōlelo No Ka Ana O Hawai‘i
 “O ka kekahi no hoi, o ka ike i ka lapaau no ka **ma‘i aumakua**, e like no me ano e o ke kulana o kela a me keia ano o ka mai o ke kanaka, pela no ke ku a kaawale ana o ka poe i ike i ka lapaau ana ma keia mau Paemoku. ”

TABLE 2. PRISMA Flow chart of Nūpepa Records in Papakilo Database



PAPAKILO DATABASE

Summary	
First recorded <i>ma'i</i>	1836
Last recorded <i>ma'i</i>	1946
Highest publication of <i>ma'i</i>	(1) 1910-1919
	(2) 1870s
	(3) 1890s
most frequent year of published <i>ma'i</i>	1870
Publication Findings	
<i>Ka Nupepa Kuokoa</i>	622 (43%)
<i>Ke Au Okoa</i>	278 (19%)
<i>Ke Aloha Aina</i>	78 (5%)
<i>Ka Hoku Hawaii</i> – 54% of English Terms	
Example: <i>Loloka'a</i> (dizziness that affects the eyes). May be similar to the physical symptoms of <i>pōniuniu</i> (grief-stricken)	



HAWAII STATE ARCHIVES

- Small sample of the archives
- 4 collections
 - Preliminary Review: Photography collection
- 53 terms in *‘ōlelo Hawai‘i*
 - Primary: *Ma‘i Kama‘āina*, especially spiritual illness
 - Secondary: physical *ma‘i*

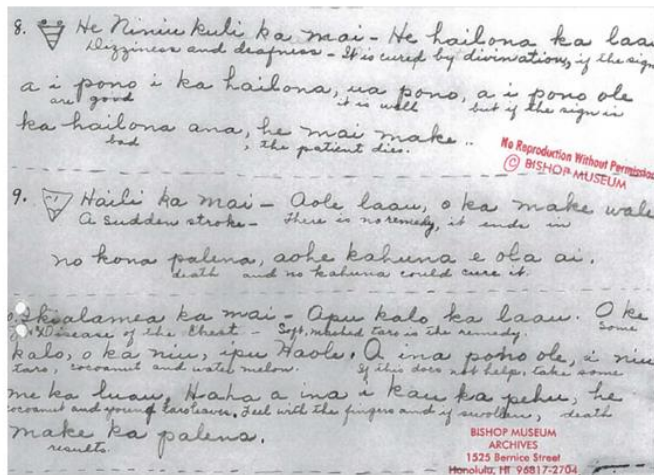
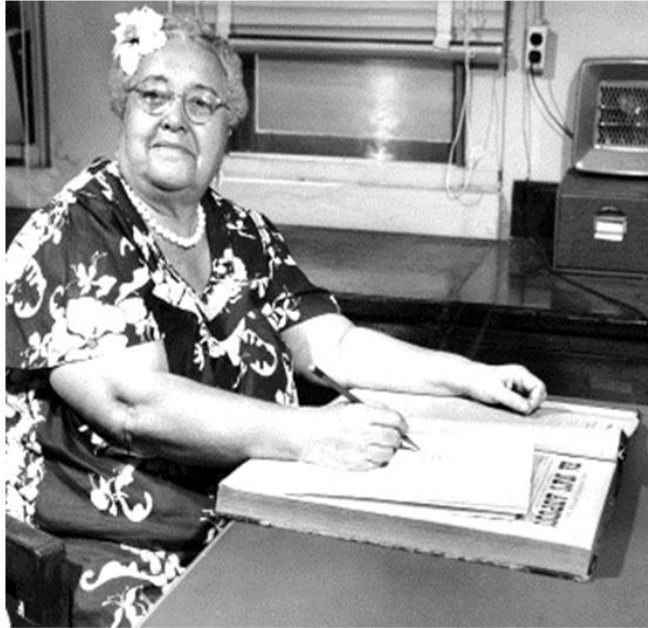
Example

- *Ha‘ili* (stroke). May be similar to *kūhewa* (heart attack). There is no noted remedy and the *kahuna* could not sure this (p. 5)



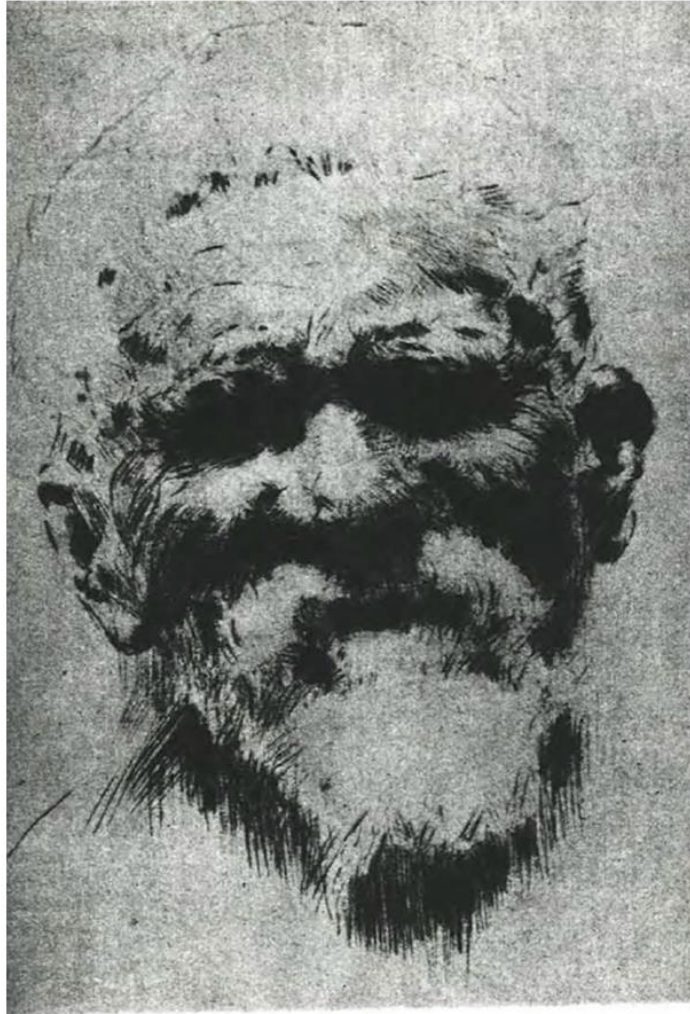
January 1900, Kaumakapili Church

THE BERNICE PAUAI BISHOP MUSEUM ARCHIVES



- Small sample of the archives
- 4 collections
 - Preliminary Review: Audio
- 1,427 terms in English and *‘ōlelo Hawai‘i*
 - Primary: *Ma‘i Kama‘āina*, especially spiritual illness
- Example
 - *‘Aiāhū‘a*: “to break secretly with the taboos of the gods, but to observe them openly; to act hypocritically. To pray to death” (p. 42)

THE QUEEN'S MEDICAL CENTER



KAHUNA LAPAAU—Etching by John Kelly

- Entire collection
 - Excluded: Clippings collection and physical archives
- 4,500 documents
- 2,594 terms in English and *‘ōlelo Hawai‘i*
 - Primary: *Ma‘i Malihini*, especially epidemics in Hawai‘i
- Example
 - “After the first serious epidemic (*‘ōku‘u*) was brought to the islands from the outside world, Kamehameha I opened a medical college in lower Nuuanu at Peleula (now Vineyard and School Sts.). Here the natives were taught to diagnose and treat diseases”

I ulu nō ka lālā i ke kumu.
The branches grow because of the trunk.
(Pukui, 1983 #1261)

PRIMARY DATA SOURCES



Protection of Study Participants

- CITI Human Subjects Protection Training
- UH HSP Expedited Review approval CHS #23530, 11/25/2015
- Renewed through 11/22/2017
- Technical support provided by RMATRIX
- Voluntary
- Audio recordings, transcripts, and notes
- Risks
- Benefits
- Data security
- Safety monitoring
- Privacy, Anonymity, and Confidentiality
- Oral and written consent

Protection of Study Participants

Acknowledgement & Signature

**By signing this consent form, you are consenting to participate in this interview.
You may keep the next copy for your records.**

_____ I give consent to participate in the research project entitled “*Kūkulu Ola Project*”

_____ I do **NOT** give consent to participate in this study.

Please initial next to either “Yes” or “No” to the following:

- | | | | |
|-----------|----------|----------|--|
| _____ Yes | _____ No | | I consent to be audio-recorded for the interview portion of this research. |
| _____ Yes | _____ No | 1 | I consent to be contacted for the purposes of data review, follow-up clarification prior to the dissertation review, and oral defense of this research. |
| _____ Yes | _____ No | 2 | I give permission to allow the investigator to use my real name in the acknowledgment of this research for written publications and oral presentations. |
| _____ Yes | _____ No | 3 | I give permission to allow the investigator to use my real name and associate it with my verbatim <i>‘ike</i> (knowledge), thoughts, and opinions to be used in the contribution of this research for written publications and oral presentations. |

NAME (Please Print)

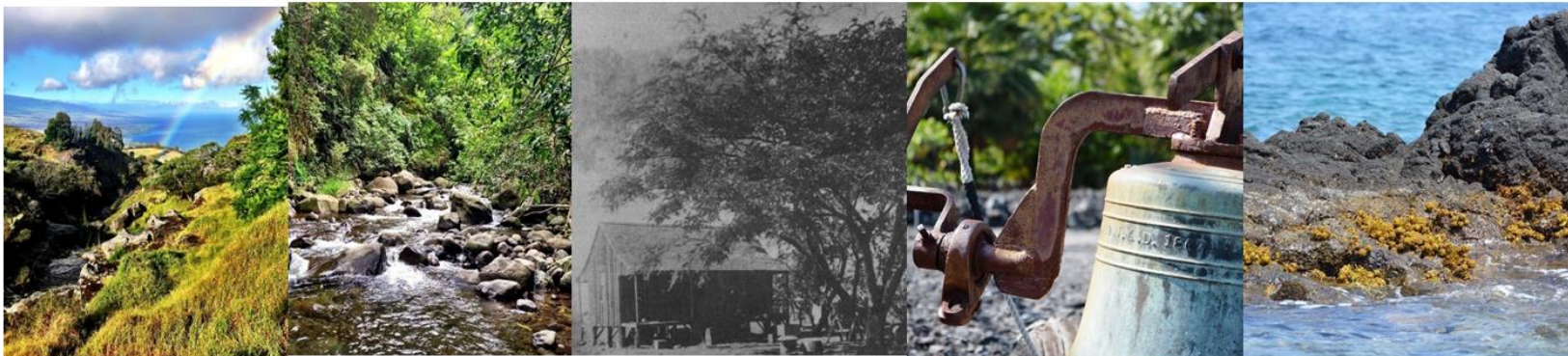
SIGNATURE

DATE

Signature of the Person Obtaining Consent: _____

KEY INFORMANT INTERVIEWS

- qualitative key informant interviews (Britten 1995, Kitzinger 1995)
- semi-structured interview (Brown et al. 2014, Judd 1998, McMullin, et al., 2009)
- 25 *kāne*, *wāhine*, and *māhū* contributors
 - age range: 41 to 85 years old; ~65
 - *pae ‘āina* representation
- in-depth training *loea* level (20+ years)
- Generations: 16 *kūpuna*, 7 *mākua o’o*, 2 *mākua*
 - expert *loea* and *haku* range
- 3,900 minutes of *‘ike* (knowledge) and *na‘auao* (wisdom)
 - average: 155 minutes
- upon consent (N=25), audio recorded (N=22) and transcribed+notes
- process goals, *makana*, and compensation



KEY INFORMANT INTERVIEWS



“Are they different? Yes. Did Hawaiians do diagnosis? Yes. Hawaiians have their own prognosis, the likely course of a disease or ailment. Hawaiian diagnosis is refined and involved high levels of observation and ways of collecting information to assess and diagnose” – Earl Kawa’a

Key Informant Interview Contributors

Reni A’ia’i Bello	Francine Dudoit	Kalei Kanuha	Malina Kaulukukui
Allen Alapa’i	Gerry Lam	Keoki Baclayon	Nerita Machado
Cy Bridges	Gwen Cardejon	Keola Chan	Rubellite Kawena Kinney Johnson
Dane Ka’ohelani Silva	Hōkūlani Holt	Kimo Alama Keaulana	Sean Puahi Chun
Dennis Kauahi	Howard Pe’a	Makana Risser Chai	Thomas Kaulukukui
Earl Kawa’a	Jerry Walker	Malcolm Nāea Chun	Wes Sen
Edana Wong			

FOCUS GROUP DISCUSSION

- One qualitative focus group (Kitzinger 1995)
- Co-facilitation, note takers, scribes
- 25 *kāne*, *wāhine*, and *māhū* contributors
 - age range: 28–58 years old; ~39
- Sampling from *Ka Pā Lonopūhā*
 - Kumu Keola Kawai‘ula‘iliahi Chan
 - ‘oihana focus: *lomilomi* ‘a‘e
- 3 hours of *mana‘o* (beliefs) and ‘*ike* (knowledge)
 - intermediate *kāko‘o* and *alaka‘i* range
- consent (N=25), audio recorded (N=25) and transcribed+notes
- process goals, *makana*, and compensation



Focus Group Contributors			
Frank Damas	Jonathan Ching, D.Arch	Kilo Akama	Mahi La Pierre
Hi‘ilani Shibata	Joylin Felix	Kimi Little	Maleka Cook
Ipolani Kiaha	Kalalena Ako	Kristina Lacno	Mālia Helelā
Jackie Seeley	Kamakanui‘aha‘ilono Jingao	Leialoha Mahuka	Marissa Wriston
Joe McGinn	Kēhaulani Young	Love Chance	Momilani Cheek
Nate Nakasone	Richard ‘Ōpūnui Storaasli	Ryan Izutsu	Samarha Lacy
Yumi Sjoblom			

FOCUS GROUP DISCUSSION

What common presentation of symptoms do you frequently see?

- Not enough sleep presenting as aches and pains
- Not drinking enough water
- Disconnection to *‘āina*
- Memories, thoughts, beliefs linked to *ma‘i*
- How to be responsible for your behaviors but also letting go of the *hihia*
- Starting with oneself and healing from within

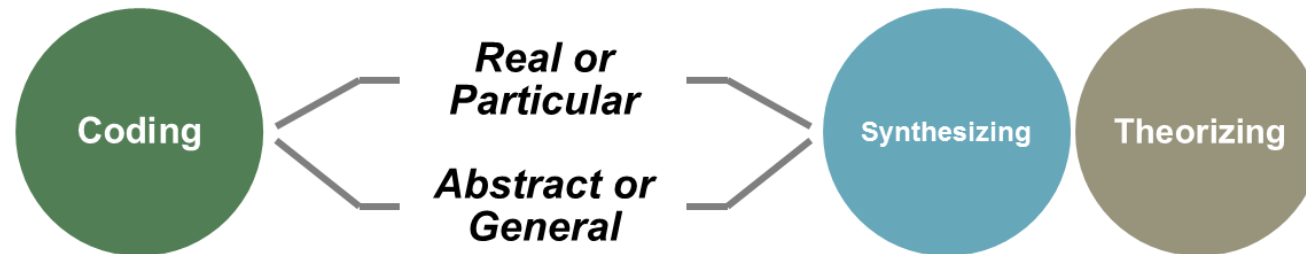


What traditional Hawaiian practices does this include?

<i>‘ai pono</i>	balanced meal	<i>‘ai kūpele</i>	therapeutic nutrition	<i>hāhā</i>	diagnosis by palpation
<i>hakahaki ‘iwi</i>	chiropractic	<i>ho‘ohāpai keiki</i>	conception of pregnancy	<i>ho‘oma‘ema‘e</i>	cleansing
<i>ho‘oponopono</i>	to set to pono, resolution	<i>hula</i>	dance	<i>kāula</i>	seer
<i>kilo</i>	expert observation	<i>lā‘au lapa‘au</i>	medicinal plants and herbs	<i>lā‘au kāhea</i>	instantaneous healing
<i>lau hala</i>	panadanus leaf used for plaiting	<i>lawai‘a</i>	fishing	<i>lomilomi</i>	physiotherapy, massage
<i>ku‘i a lua</i>	warrior art form	<i>mahi ‘ai</i>	agriculturalist	<i>oli</i>	chanting
<i>pōhaku</i>	sacred stones possessing <i>mana</i>		<i>pūlo‘ulo‘u</i>	steam bath for illness	

<i>ho‘ona‘auao</i>	education	<i>‘āina</i>	land
<i>kai</i>	sea water	<i>wai</i>	fresh water

CODING & ANALYSIS



- Grounding Qualitative Evidence Favoring Theory (Strauss & Corbin, 1994; Saldaña, 2013)
 - Codes
 - Categories
 - Themes
 - Theory
- Qualitative Coding (Saldaña, 2013)
 - First cycle coding methods
 - Post-cycle techniques
 - Second-cycle coding methods
 - Selective coding of terms
- Inter-Rater Reliability (Wongpakaran, 2013)
 - 4 raters, random sample

TABLE 3. Percent agreement among raters

	Interviews	Focus Group
PI (KF)	X	X
Rater 2	X	X
Rater 3	X	
Rater 4		X
Agreement	77%	85%

CODING & ANALYSIS

The screenshot shows the ATLAS.ti software interface. The main window displays a document titled "P42: KO Interview #12 DS (final verified).pdf". The document text includes:

- "Be transparent, share"
- Exemption for lomi + lā'au
- Med school for Hawaiian medicine
 - The system isn't working we need to change the system
- Definition of Ma'i
- Loss of connection to family, ancestors, 'āina
 - Ex: lōkahi triangle
- To be ma'i means you have a loss of lōkahi
- Long life lomi lomi can rebuild lōkahi
- The center of the triangle is filled with ola "life force"
 - This transitions the triangle to a pyramid
 - This creates mana
- You have to be pe...
- Ritual for learning
- Healing: 80% spiritual / 20% la'au
- Changed to 80% mana / 20% aloha
 - Ex: uhaloa for pēhu
 - Uses the whole plant
- 'awa, koli, alohe, noni
- Does research on biochemical in plants treatment with students and their ailments
- Hula / ha'iha'i
 - Lomilomi can treat those ailments
- You can use spots for dislocation bones can heal

The left sidebar shows a list of primary documents (P21 to P45) and a list of codes. The right sidebar shows a list of codes. A blue dashed box highlights a section of text and codes, with a label "Selective coding" pointing to it.

CODING & ANALYSIS

The screenshot shows the ATLAS.ti software interface with a transcript of an interview. The transcript is divided into segments labeled with codes like DKS, KF, and DKS. A blue box highlights a segment of text, and a label "Open coding" points to it. The interface includes a menu bar, a toolbar, a list of primary documents on the left, a list of codes on the bottom left, and a list of code groups on the right. The transcript text is as follows:

0040
0041 DKS: No, her name is Yuniko Kageyama. I met her a few years ago when she came to study um, level 1 lomilomi. My lomi style is called, 'Long Life Lomilomi' to differentiate it from other lineages.
0042
0043 KF: Can you describe to me, um, the style of Long Life Lomilomi?
0044
0045 DKS: That's a good question. You know, I try to use all of my background which is ah bio-medicine and um as well as um training in mo'olono, Order of Lono, and ah in Order of Lono of course I wasn't studying anatomy, but we were studying chanting and meditation rituals, protocols to help to gather and protect our mana.
0046
0047 KF: And so you blend and you integrate these different practices into one
0048
0049 DKS: Correct.
0050
0051 KF: Long Life Lomilomi teaching?
0052
0053 DKS: That's correct. And la'au lapa'au as well.
0054
0055 KF: And you had mentioned ho'oponopono earlier.
0056
0057 DKS: Yes,
0058
0059 KF: Yes, you
0060
0061 DKS: My teacher- my first teacher was Kahu Lanakila Brent in Kona. I studied with him for a number of years, learned his protocol for chants and danced hula with his hāhau. He's the guy I learned hūnā from. He taught hūnā in those days.
0062
0063 KF: Mmm.
0064
0065 DKS: He stopped teaching in the late eighties because people were, um, misrepresenting it and abusing it.
0066
0067 KF: Mmmmm.
0068
0069 DKS: Lanakila was a friend of and a mentor to this guy, that wrote the book the Secret Science of Hawai'i. Um, Max Freedom Long.
0070
0071 KF: Mmmmm.
0072
0073 DKS: Everybody, you know, has their opinions about Max. Well, Kahu Lanakila knew Max personally and was one of his mentors. Um, Max had another mentor in Kona as well. A couple of them. I never knew Max but um what I learned was from Lanakila himself.
0074
0075 DKS: Mmm.
0076
0077 DKS: Anyway, if we look at, if we look at lomilomi, what I notice when I spoke with the kupuna I learned from them that they had some knowledge about the body and anatomy and so forth. But they didn't teach it to their students. They basically taught their students how to do the mechanical massage component.
0078
0079 KF: Mmm. Right.
0080
0081 DKS: So um, I added in to my Long Life Lomilomi um system, Hawaiian prayers, use of Hawaiian objects like ti leaves, um salt, water, blessing protocols. To add the spiritual component to the process.
0082
0083 KF: Hm.

The codes applied to the transcript are:

- 0041: DKS
- 0043: KF
- 0045: DKS
- 0047: KF
- 0049: DKS
- 0051: KF
- 0053: DKS
- 0055: KF
- 0057: DKS
- 0059: KF
- 0061: DKS
- 0063: KF
- 0065: DKS
- 0067: KF
- 0069: DKS
- 0071: KF
- 0073: DKS
- 0075: DKS
- 0077: DKS
- 0079: KF
- 0081: DKS
- 0083: KF

The code groups on the right are:

- 0041: DKS
- 0043: KF
- 0045: DKS
- 0047: KF
- 0049: DKS
- 0051: KF
- 0053: DKS
- 0055: KF
- 0057: DKS
- 0059: KF
- 0061: DKS
- 0063: KF
- 0065: DKS
- 0067: KF
- 0069: DKS
- 0071: KF
- 0073: DKS
- 0075: DKS
- 0077: DKS
- 0079: KF
- 0081: DKS
- 0083: KF

CODING & ANALYSIS

Code Manager [HU: Kukulū Ola Primary Data (Test File)]

Categories, network and density coding

Name	Grounded	Density	Author	Created	Modified	Families
Name of Gods	49	0	Kealoha ...	12/06/20...	02/23/20...	Proper Names
Name of Other Loea	234	1	Super	12/01/20...	03/03/20...	Kanaka, Proper Names
Name of Plants	77	0	Kealoha ...	12/06/20...	12/29/20...	Proper Names
Name of Waters	3	0	Kealoha ...	12/06/20...	12/08/20...	Proper Names
New Ma'i/emerging illnesses	64	0	Kealoha ...	12/06/20...	01/12/20...	
Non-Hawaiian	8	0	Kealoha ...	12/13/20...	01/05/20...	
Not everything can help all ca..	1	0	Kealoha ...	12/07/20...	12/07/20...	
Ola kino, ola ?uhana, ola ?ike..	10	0	Super	12/01/20...	03/01/20...	
Oli/Chant	24	0	Kealoha ...	12/06/20...	12/29/20...	Traditional Practice Type
once the knowledge is there, i..	0	0	Kealoha ...	12/13/20...	12/13/20...	
Organization Name	60	0	Kealoha ...	12/07/20...	03/01/20...	
Palua/Dualism	30	1	Kealoha ...	12/07/20...	02/17/20...	
Papa 'ili/ili/Reading stones	2	1	Kealoha ...	12/06/20...	12/08/20...	
Part of Body	23	0	Kealoha ...	12/08/20...	02/23/20...	
People names (other)	52	0	Super	12/02/20...	02/01/20...	Kanaka, Proper Names
Place Names	125	0	Super	12/01/20...	02/23/20...	Proper Names
Pohaku/Stones	11	1	Kealoha ...	12/06/20...	12/29/20...	
Popo/medicine balls	5	0	Kealoha ...	12/06/20...	12/29/20...	
Practice style	78	0	Kealoha ...	12/07/20...	03/03/20...	
Prognosis	3	0	Super	12/01/20...	12/28/20...	Functionality
Pu'uone/Divination	0	0	Super	12/01/20...	12/01/20...	Traditional Practice Type
Pule/prayer	54	0	Kealoha ...	12/06/20...	03/03/20...	
Pulo'ulo'u/Steam Bath	8	0	Kealoha ...	12/06/20...	12/08/20...	Traditional Practice Type
Questions/Nināu	24	0	Kealoha ...	12/14/20...	02/23/20...	
Recommendations	70	1	Kealoha ...	12/08/20...	03/01/20...	Next steps
Rituals	54	1	Kealoha ...	12/07/20...	03/01/20...	
She discovered that even with ..	1	0	Kealoha ...	12/08/20...	12/08/20...	
She knew that she needed to he..	1	0	Kealoha ...	12/08/20...	12/08/20...	
Sickness	7	0	Kealoha ...	12/05/20...	02/23/20...	
Signs	26	0	Kealoha ...	12/07/20...	02/23/20...	
Substance Use	9	0	Kealoha ...	12/08/20...	01/25/20...	
Symptoms	24	1	Kealoha ...	12/07/20...	03/01/20...	
Teaching Style	109	0	Kealoha ...	12/08/20...	03/03/20...	
The aloha part is um when you ..	3	1	Kealoha ...	12/08/20...	12/15/20...	
Time Period/Time Line	31	0	Kealoha ...	12/08/20...	02/23/20...	
Top of head to bottom of feet..	4	0	Kealoha ...	12/08/20...	12/29/20...	
Transferrable~	14	1	Kealoha ...	12/05/20...	01/25/20...	Functionality
Trauma	8	0	Kealoha ...	12/08/20...	01/12/20...	

CODING & ANALYSIS

Primary Doc Manager [HU: Kukulū Ola Primary Data (Text File)]

Documents Edit Miscellaneous Output View

Search (Name)

X

Show all Primary Documents

Ai Pono/Food (14)

Haha/Feel (30)

Hakihaki Iwi/Ha'iha'i/Bone setting (24)

Hawai'i Island (17)

Ho'ohapai Keiki (13)

Ho'oma'ema'e/Cleanse (20)

Ho'oponopono/Resolution (39)

Hula/Performing Arts (20)

Kane Interviews (26)

Kaua'i (12)

Kaula/Kilo/Wanana/Seer or Prophet (22)

Kupuna (29)

La'au Lapa'au/Medicinal plants (28)

Lau hala/Weaving (4)

Lomilomi/massage (26)

Lua/warrior (14)

Makua O'o Generation (18)

Maui (12)

Moloka'i (4)

Nalu/No'ono'ono/Meditate (10)

O'ahu (37)

Oli/Chant (14)

Pohaku/Stones (8)

Pūlo'u/Steam Bath (9)

Wahine Interviews (19)

Co-occurrence analysis

ID	Name	Media	Quotations	Location	Author	Families
P1	Kukulū Ola Focus Group Transcript.docx	Rich Text	51	My Library	Super	'Ai Pono/Food, Haha/Feel, Ho'oponopono/Resolution, La'au Lapa'au/Medicinal plants, Lomilomi/massage, Makua O'o Generation, O'ahu
P2	KO Interview_Transcript_Aiai Bello.docx	Rich Text	251	My Library	Super	'Ai Pono/Food, Hula/Performing Arts, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P3	KO Interview_Transcript_DaneSilva.docx	Rich Text	341	My Library	Super	'Ai Pono/Food, Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P4	KO Interview_Transcript_DennisKauahi_KaleiKa... .docx	Rich Text	284	My Library	Super	Ho'oponopono/Resolution, Kane Interviews, Kaua'i, Kupuna, Makua O'o Generation, O'ahu, Wahine Interviews
P5	KO Interview_Transcript_EdanaWong.docx	Rich Text	160	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, La'au Lapa'au/Medicinal plants, Lomilomi/massage, Maui, Moloka'i, O'ahu, Wahine Interviews
P6	KO Interview_Transcript_FrancineDudoit.docx	Rich Text	121	My Library	Super	'Ai Pono/Food, Ho'oponopono/Resolution, Kupuna, La'au Lapa'au/Medicinal plants, Lomilomi/massage, Maui, Moloka'i, O'ahu, Wahine Interviews
P7	KO Interview_Transcript_GwenCardejon.docx	Rich Text	212	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oponopono/Resolution, Hula/Performing Arts, Kaua'i, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P8	KO Interview_Transcript_HowardPea.docx	Rich Text	160	My Library	Super	Haha/Feel, Hawai'i Island, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Maui, O'ahu
P9	KO Interview_Transcript_JerryWalker.docx	Rich Text	53	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kaua'i, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P10	KO Interview_Transcript_KimoAlamaKeaulana... .docx	Rich Text	443	My Library	Super	Haha/Feel, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P11	KO Interview_Transcript_KooliChard.docx	Rich Text	0	My Library	Super	Haha/Feel, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Maui, O'ahu
P12	KO Interview_Transcript_CyBridges.docx	Rich Text	0	My Library	Super	Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P13	KO Interview_Transcript_MalcomChun.docx	Rich Text	143	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oponopono/Resolution, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P14	KO Interview_Transcript_TommyKaulukui.docx	Rich Text	0	My Library	Super	Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Lua/warrior, O'ahu
P15	KO Interview_Transcript_WesSen.docx	Rich Text	9	My Library	Super	'Ai Pono/Food, Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Maui, O'ahu
P16	KO Interview_Transcript_MakanaChai.docx	Rich Text	51	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Lomilomi/massage, Makua O'o Generation, O'ahu, Wahine Interviews
P17	Interview #25 EK (final verified).pdf	PDF	41	My Library	Super	'Ai Pono/Food, Haha/Feel, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Moloka'i
P18	KO Interview #2 KC (final verified).pdf	PDF	11	My Library	Super	'Ai Pono/Food, Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kupuna, Maui, O'ahu
P19	KO Interview #14 & #15 DK, KK (final verified).pdf	PDF	5	My Library	Super	Ho'oponopono/Resolution, Kane Interviews, Kaua'i, Kupuna, Makua O'o Generation, O'ahu, Wahine Interviews
P20	KO Interview #1 MC (final verified).pdf	PDF	12	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Lomilomi/massage, Makua O'o Generation, O'ahu, Wahine Interviews
P21	KO Interview #22 JW (final verified).pdf	PDF	175	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kaua'i, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P22	KO Interview #3 EW (final verified).pdf	PDF	63	My Library	Super	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, La'au Lapa'au/Medicinal plants, Lomilomi/massage, Maui, Moloka'i, O'ahu, Wahine Interviews
P23	KO Interview_Transcript_EarlKawaa.docx	Rich Text	0	My Library	Kealoa Fox	'Ai Pono/Food, Haha/Feel, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Moloka'i
P24	KO Interview_Transcript_HokuHolt.docx	Rich Text	0	My Library	Kealoa Fox	Ho'oponopono/Resolution, Hula/Performing Arts, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lomilomi/massage, Maui, Moloka'i, O'ahu, Wahine Interviews
P25	KO Interview_Transcript_MalinaKaulukui.docx	Rich Text	0	My Library	Kealoa Fox	Ho'oponopono/Resolution, Hula/Performing Arts, Kupuna, Lua/warrior, O'ahu, Wahine Interviews
P26	KO Interview_Transcript_RubelliteJohnson.docx	Rich Text	0	My Library	Kealoa Fox	Haha/Feel, Hawai'i Island, Hula/Performing Arts, Kaua'i, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, O'ahu, Oli/Chant, Wahine Interviews
P27	KO Interview_Transcript_GerryLam.docx	Rich Text	0	My Library	Kealoa Fox	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P28	KO Interview #10 AA (final verified).pdf	PDF	6	My Library	Kealoa Fox	Haha/Feel, Ho'oponopono/Resolution, Kane Interviews, Kupuna, O'o Generation
P29	KO Interview #11 FD (final verified).pdf	PDF	96	My Library	Kealoa Fox	'Ai Pono/Food, Ho'oponopono/Resolution, Kupuna, La'au Lapa'au/Medicinal plants, Lomilomi/massage, Maui, Moloka'i, O'ahu, Wahine Interviews
P30	KO Interview #13 HP (final verified).pdf	PDF	22	My Library	Kealoa Fox	Haha/Feel, Hawai'i Island, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Maui, O'ahu
P31	KO Interview_Transcript_KeokiBacalayan.docx	Rich Text	0	My Library	Kealoa Fox	'Ai Pono/Food, Ho'oma'ema'e/Cleanse, Kane Interviews, La'au Lapa'au/Medicinal plants, Makua O'o Generation, O'ahu
P32	KO Interview #16 CB (final verified).pdf	PDF	133	My Library	Kealoa Fox	Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P33	KO Interview #17 PC (final verified).pdf	PDF	9	My Library	Kealoa Fox	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kaua'i, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P34	KO Interview #19 HH (final verified).pdf	PDF	135	My Library	Kealoa Fox	Ho'oponopono/Resolution, Hula/Performing Arts, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Maui, Oli/Chant, Wahine Interviews
P35	KO Interview #20 NM (final verified).pdf	PDF	149	My Library	Kealoa Fox	'Ai Pono/Food, Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Lua/warrior, O'ahu, Wahine Interviews
P36	KO Interview #21 KK (final verified).pdf	PDF	94	My Library	Kealoa Fox	Haha/Feel, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P37	KO Interview #4 MaChun (final verified).pdf	PDF	33	My Library	Kealoa Fox	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P38	KO Interview #5 AB (final verified).pdf	PDF	62	My Library	Kealoa Fox	'Ai Pono/Food, Hula/Performing Arts, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P39	KO Interview #6 WS (final verified).pdf	PDF	71	My Library	Kealoa Fox	'Ai Pono/Food, Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'ohapai Keiki, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Lua/warrior, O'ahu, Wahine Interviews
P40	KO Interview #8 MK (final verified).pdf	PDF	61	My Library	Kealoa Fox	Ho'oponopono/Resolution, Hula/Performing Arts, Kupuna, Lua/warrior, O'ahu, Wahine Interviews
P41	KO Interview #9 GL (final verified).pdf	PDF	43	My Library	Kealoa Fox	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P42	KO Interview #12 DS (final verified).pdf	PDF	141	My Library	Kealoa Fox	'Ai Pono/Food, Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Hawai'i Island, Ho'oma'ema'e/Cleanse, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kupuna, Lua/warrior, O'ahu, Wahine Interviews
P43	KO Interview #18 GC (final verified).pdf	PDF	56	My Library	Kealoa Fox	Haha/Feel, Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'ohapai Keiki, Ho'oponopono/Resolution, Hula/Performing Arts, Kane Interviews, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, La'au Lapa'au/Medicinal plants, Lau hala/Weaving, Maui, Nalu
P44	KO Interview #23 TK (final verified).pdf	PDF	60	My Library	Kealoa Fox	Hakihaki Iwi/Ha'iha'i/Bone setting, Ho'oponopono/Resolution, Kane Interviews, Kupuna, Lua/warrior, O'ahu
P45	KO Interview #24 RJ (final verified).pdf	PDF	30	My Library	Kealoa Fox	Haha/Feel, Hawai'i Island, Hula/Performing Arts, Kaua'i, Kaula/Kilo/Wanana/Seer or Prophet, Kupuna, O'ahu, Oli/Chant, Wahine Interviews

Categories, for comparative analysis

FOX_Kūkulū Ola Hou

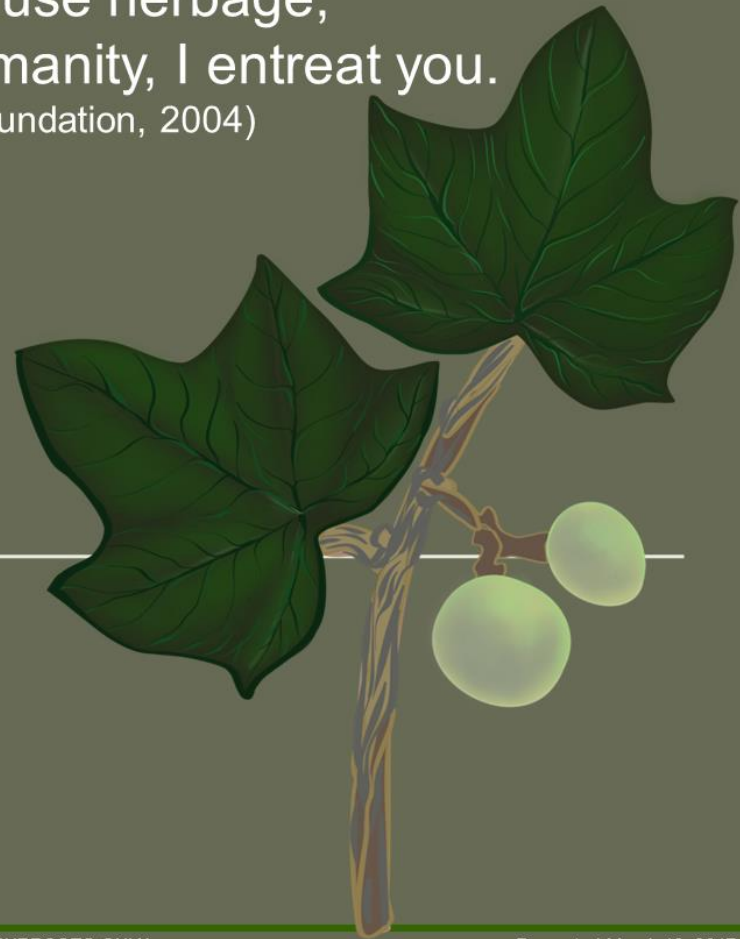
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Presented March 13, 2017

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*Nā 'aumakua lau nāhelehele,
ho'oulu kānaka, e maliu mai.*
Ancestors of profuse herbage,
of the procreation of humanity, I entreat you.
(Edith Kanaka'ole Foundation, 2004)

FINDINGS





Nā Ma‘i Kama‘āina ma Ka ‘Oihana Maui Ola:
**Understanding the Traditional Hawaiian Health System and
Hawaiian Perceptions of Imbalance as Illness**

What are ma'i kama'āina?



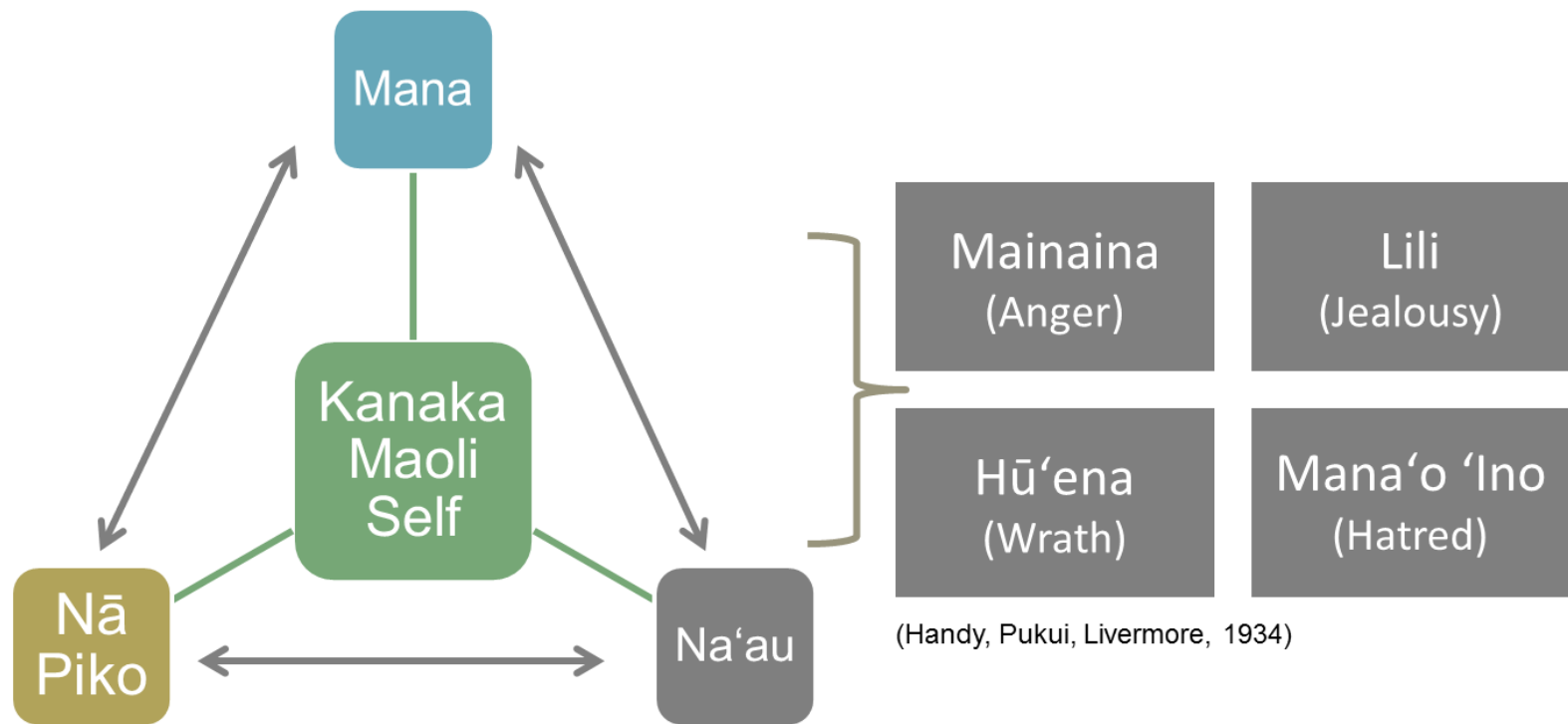
native illnesses or
indigenous diseases
which occurred in
Ka 'Oihana Maui Ola
pre-contact

(Heighton, 1971, Howard, 1979; Kamakau, 1991, Luomala, 1989)

KŪKULU HOU + KŪKULU OLA = KŪKULU OLA HOU

Mana and Maui Ola

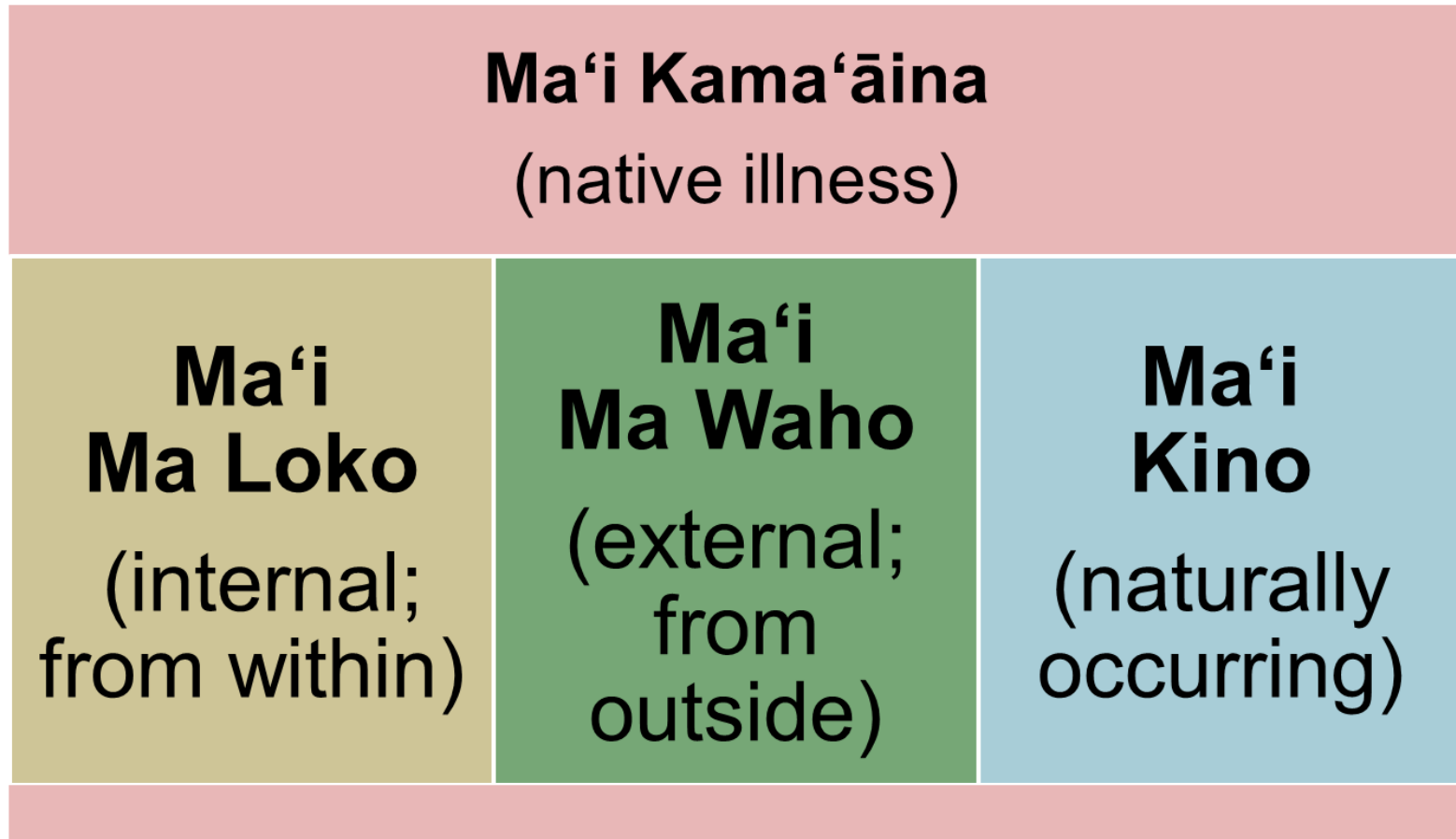
TABLE 4. *Native Hawaiian Cultural Identity Framework*



(Blaisdell, 1991; Crabbe, 2011; Crabbe & Fox, 2016)

PART ONE: O Ka Wā Mamua

Traditional Hawaiian Reference to Illness



PART ONE: O Ka Wā Mamua

Hawaiian Healing of *Ma'i* and *Kāhuna* Disciplines

Hāhā

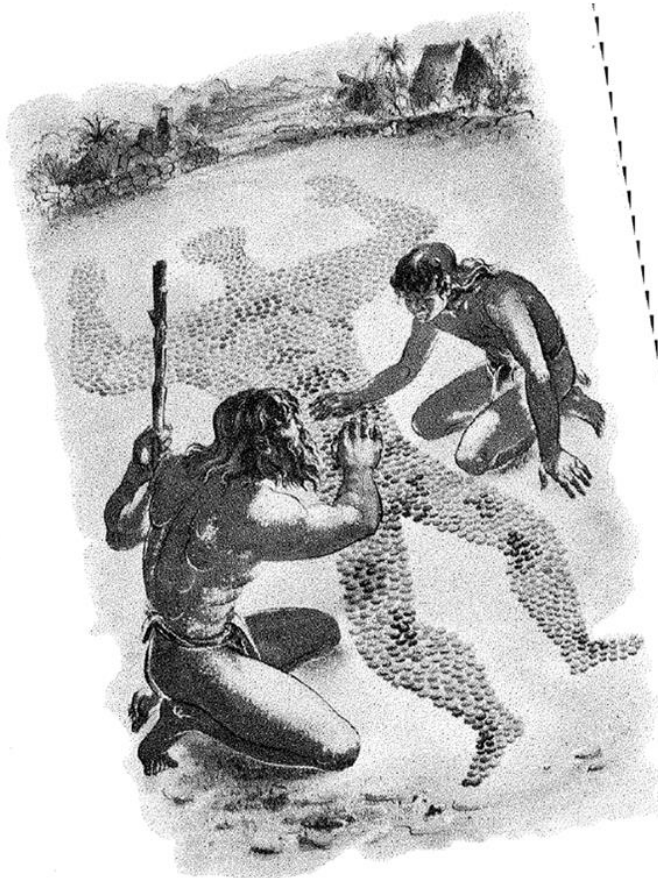
- Descended from Lonopūhā
 - restored balance based on highly accurate experimentation, observation and deduction to reach diagnosis

Ma'i Kama'āina

- individual
- 'ohana
- community including spiritual forces

(Gutmanis, 1992; Larsen, 1946)

PART ONE: O Ka Wā Mamua



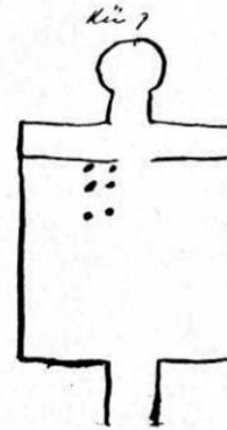
Papa 'Ili'ili

(Source: Kamakau, 1991)

Papahukukahi

*He mea loa keia, a he mea
mohe i keia, mai lili'ona
e like me keia kii*

Kāhuna Hāhā, Keaweamahi & Kawa'a, 1865



*• E mana i ka aia o kolu, malaila e loa ai
na luan o keia mea. Mo ka fofoloi loa
a fela ma ka aia o lima, oia kii ka fii
kamohiaiku a ma na fii e ae.*

(Source: Hawai'i State Archives, 1891)

What are Hawaiian *ma'i ma loko*?
sickness “from within” caused by patients
or family problems like misdeeds

Ho‘oponopono

- “experts to restore *pono*”
- utilized to maintain strong bonds within those layers of kin

Ma'i Kama'āina

Example:

- *ma'i 'ohuma 'ia*
 - the disgruntlement of a relative

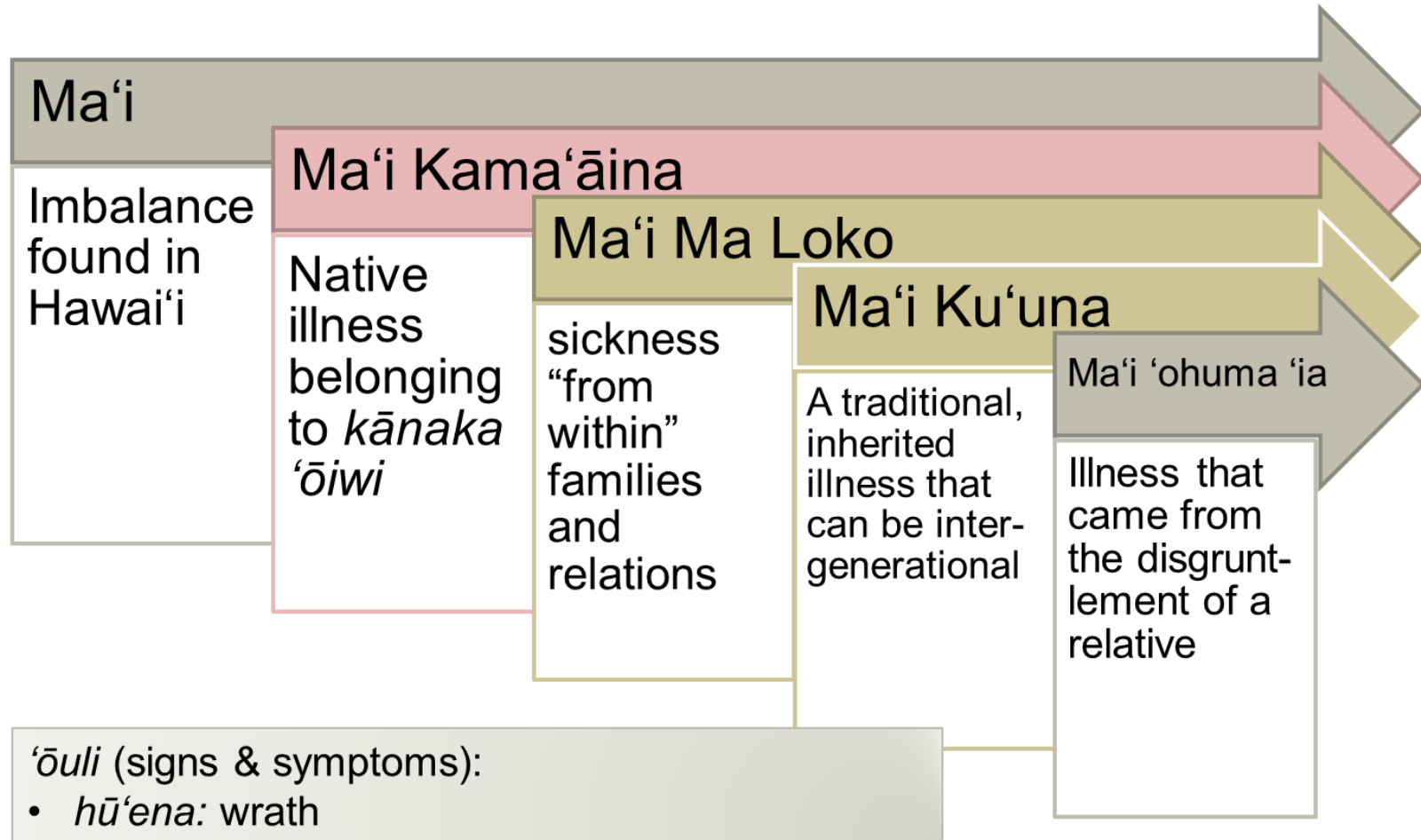
Category:

- *ma'i ku'una*
 - inherited diseases

(Handy *et al.* 1953, 1972; Kamakau 1991: 104; Gutmanis 1992: 137)

PART TWO: Ka Mo'ohihia

What are Hawaiian *ma'i ma loko*?



What are Hawaiian *ma'i ma waho*?

Improper conduct by individuals
who then became spiritually ill.

Lā'au Lapa'au

- “experts of plant medicine”
- important to address spiritual offenses to prevent/remedy *ma'i*

Ma'i Kama'āina

Example:

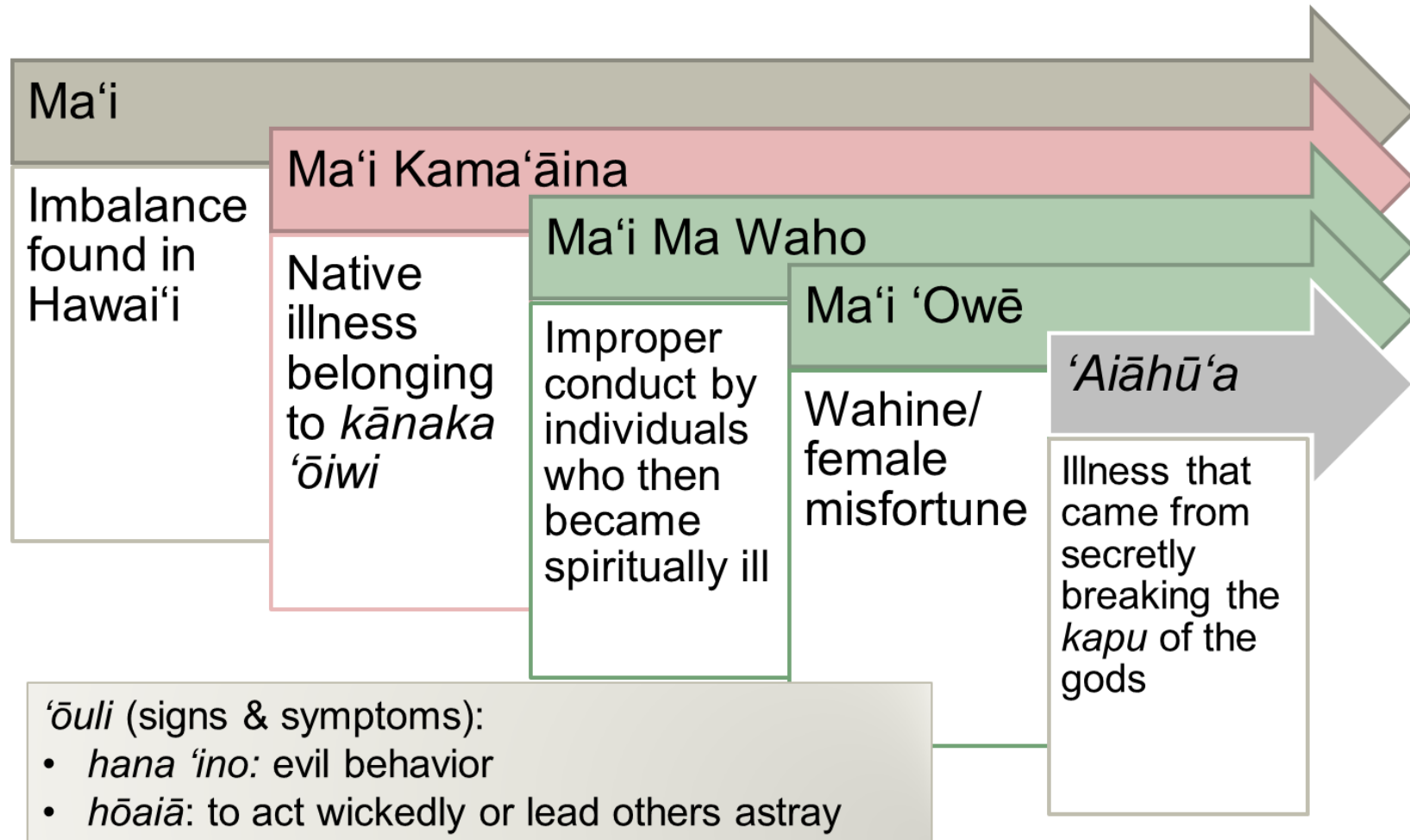
- *'Aiāhū'a*
 - Illness that came from secretly breaking the *kapu* of the gods

Category:

- *ma'i 'owē*
 - female misfortune

PART TWO: Ka Mo'ohia

What are Hawaiian *ma'i ma waho*?



PART ONE: O Ka Wā Mamua

What are Hawaiian *ma'i kino*?

body sickness, physical illness,
naturally occurring; **not** of spiritual origin

Lomilomi

- “experts of physical therapy”
- Used anatomy to identify *ma'i* through massage manipulations
 - cleared the *na'au*
 - aligned the *piko*

Ma'i Kama'āina

- *ho'omaio*
 - to be weak in the muscles of the thigh
- *lokuloku*
 - numbness of limbs
- *a'ahu'i*
 - aching vein or tendon
- *'a'i 'o'ole'a*
 - stiff neck



***Nā Ma‘i Malihini ma Ka ‘Oihana Mauli Ola:
Illness Change in Hawai‘i and the
Mo‘ohia of Diseases Introduced to Kānaka ‘Ōiwi***

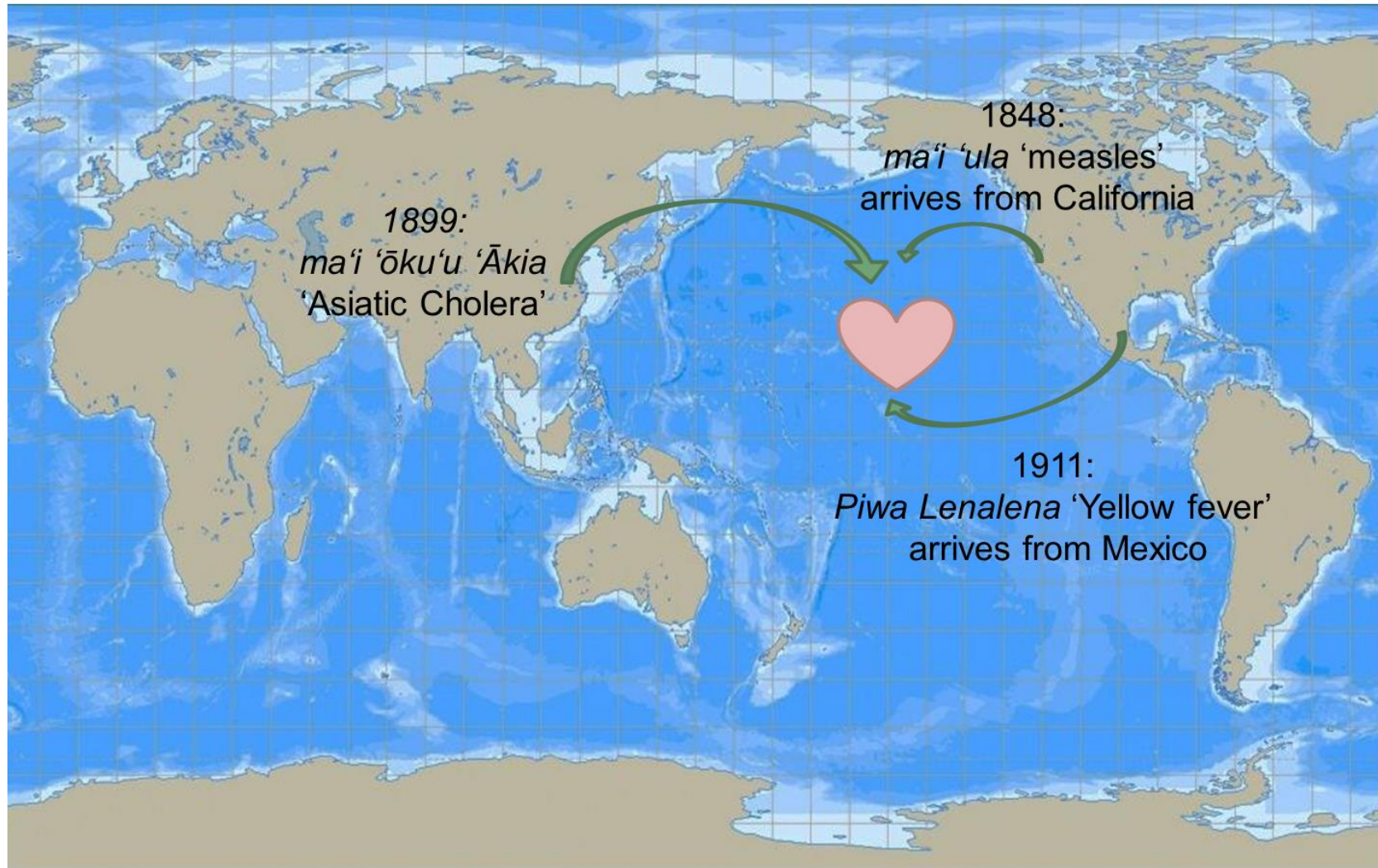
What are ma'i malihini?



introduced illnesses
or foreign diseases
that were
integrated into
Ka 'Oihana Maui Ola
post-contact

(Bushnell, 1993:24; Howard 1971:120; Pukui, Haertig & Lee 1972b:95; Kamakau 1991:75; Howard 1979; Heighton, 1971: 158; Luomala 1989:295)

PART TWO: Ka Mo'ohihia



PART TWO: Ka Mo'ohia

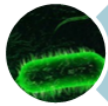
Population Collapse

- **↓ 90%** from biological, psychological and physical displacements associated with epidemics (Blaisdell 1998, OHA 2011a, OHA 2011b).
- 1804: **↓ ~ 50%** (Malo 1898, Schmitt 1970)
- 1848-1849: **↓ ~25%** (Bushnell 1993, Hope and Hope 2003, Schmidt and Nordyke 2001, Shulman, Shulman and Sims 2009)
- 1850-1853: **↓ 15%** (Chun 1994, Kamakau 1961, Osorio 2002, Schmitt and Nordkye 2001).

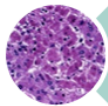
“ahulau iholā nā kānaka i ka make”

PART TWO: Ka Mo'ohihia

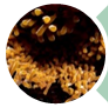
What are ma'i pālahalaha?



Ma'i Pālahalaha (Infectious Disease)



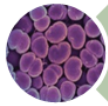
Ma'i Laulā (Contagious Disease)



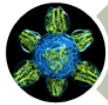
Ma'i Lele (Communicable Disease)



Ma'i Ahulau (Epidemics)



Pāmake (Plagues)



Ma'i Luku (Pandemics)



ko'ohune (bacterial) or *mea ho'oma'i* (viral)

(Bushnell 1993:39; Chun 2007:2; Kamakau 1991:109; Kawai'ae'a 1980a:25; Kawai'ae'a 1980b:25; Pukui & Elbert 1986).

PART TWO: Ka Mo'ohihia

Ma'i Ahulau

Epidemics through an 'Ōiwi Perspective: Integrating Biomedical and Ethnomedical Insights

Geographic Comparison	Crude Mortality Rate, 1849 Census [Per 1,000]	TABLE 5. <i>Population, January 1849, and Births and Deaths, 1848, by Islands</i>						
		Year	Est. population		Births	Deaths	Rates ^a	
Jan. 1	July 1		Birth	Death				
All Islands	98.5							
Hawai'i	100.2							
O'ahu	106.1	1846	95,900	95,300	(NA)	(NA)	(NA)	(NA)
		1847	94,700	94,100	(NA)	(NA)	(NA)	(NA)
Maui	86.7	1848	93,500	90,300	1,478	7,943	16.4	88.0
Kaua'i	98.8	1849	87,100	85,600	1,422	4,320	16.6	50.5
Moloka'i	120.2	1850	84,200	83,900	(NA)	(NA)	(NA)	(NA)
Ni'ihau	60.9	1851	83,700	82,000	2,424	5,792	29.6	70.6
		1852	80,300	80,000	1,852	2,822	23.2	35.3
Lāna'i	89.0	1853	79,600	76,400	1,513	8,026	19.8	105.1
United States	13.9	1854	73,100	73,000	1,381	1,439	18.9	19.7
		1855	72,900	72,900	1,642	1,685	22.5	23.1

a. Per 1,000 population.

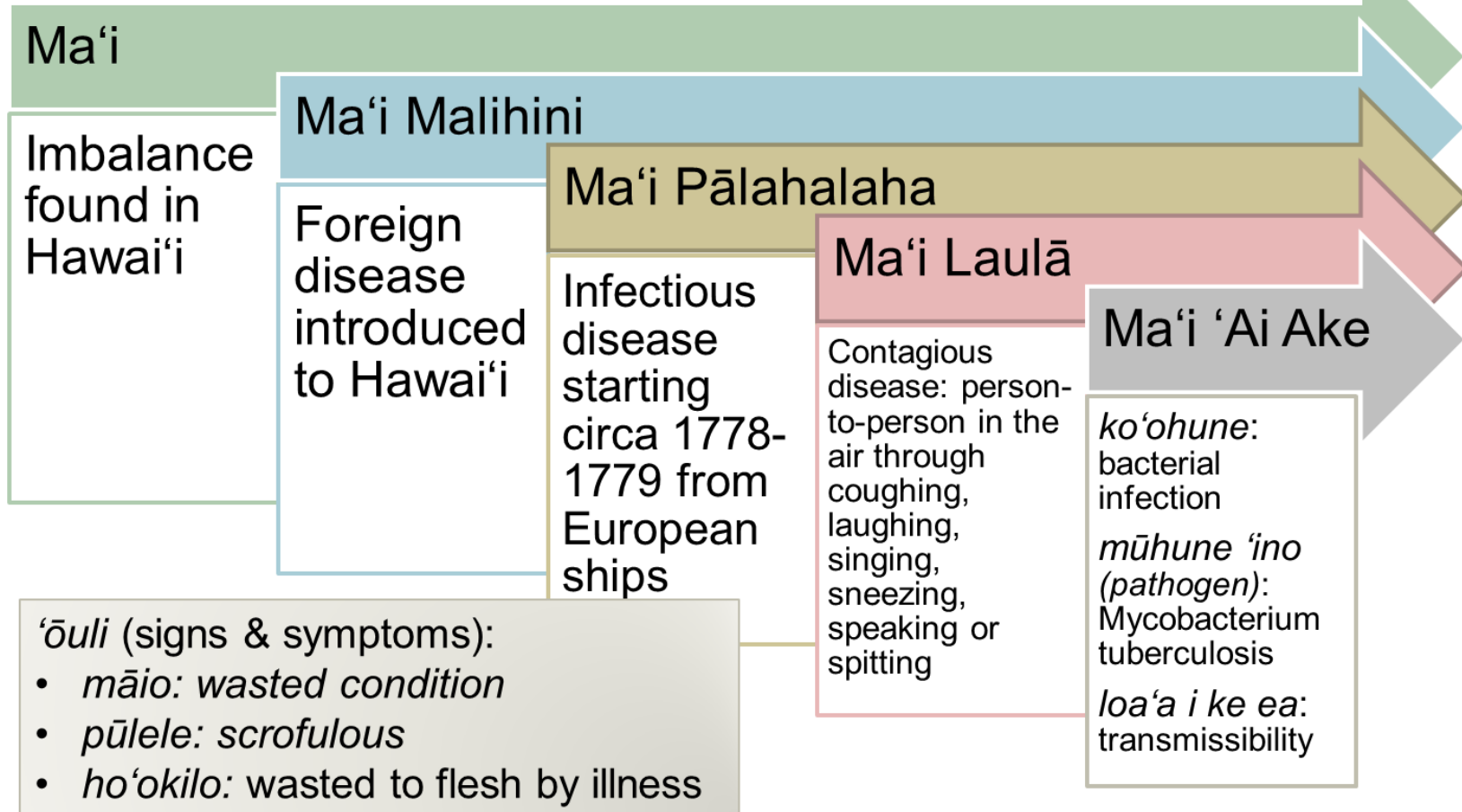
*From: Schmidt, Demographic Statistics of Hawai'i: 1778-1965

Source: Schmidt & Nordkye, 2001

PART TWO: Ka Mo'ohia

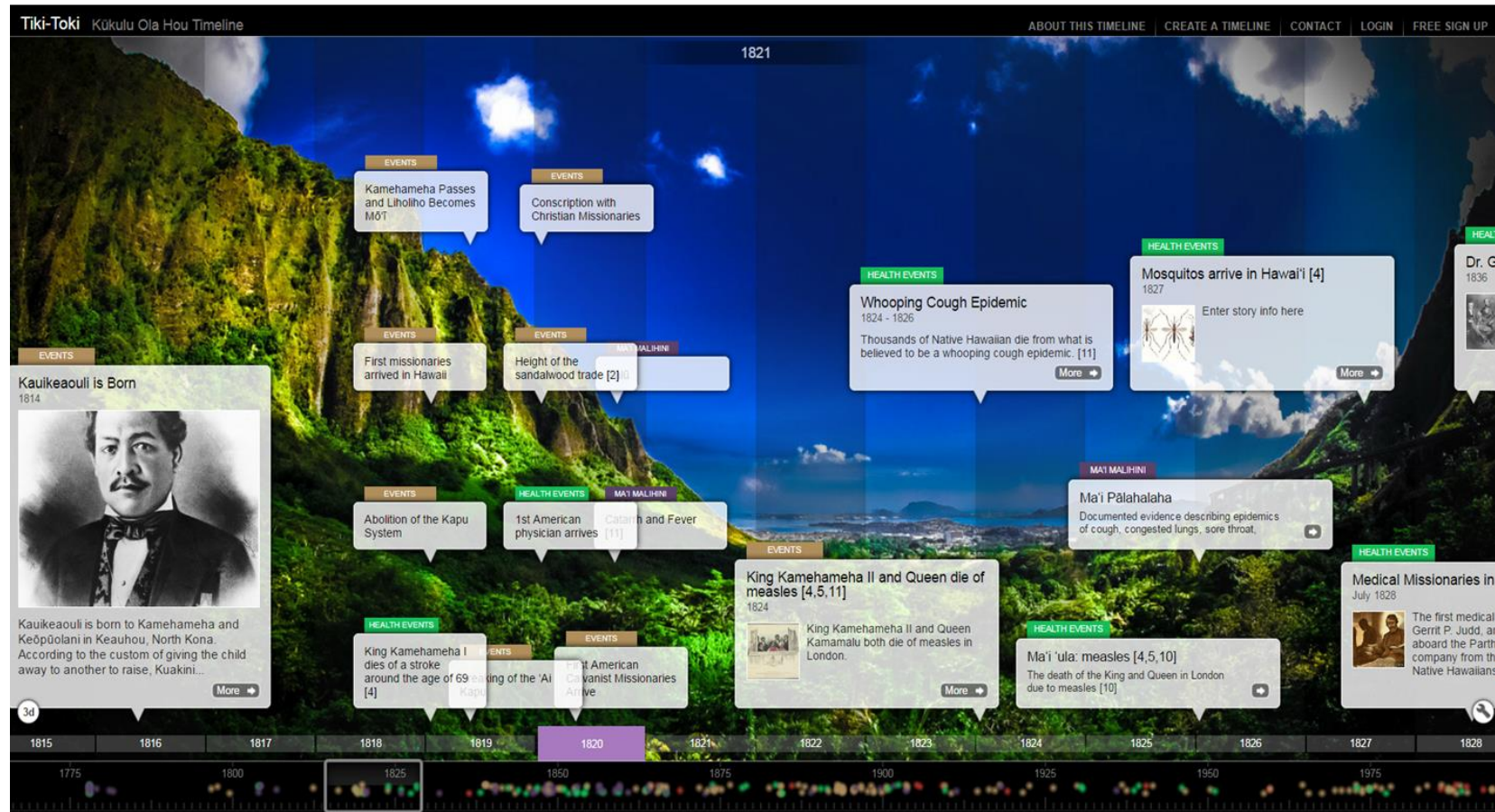
Ma'i Ahulau

Ma'i 'Ai Ake, Tuberculosis (Consumption)



PART TWO: Ka Mo'ohihia

Kūkulu Ola Hou Interactive Timeline





***Kūkulu Ola Hou.* Reconstructing the Native Hawaiian Medical Inventory and Taxonomy based on Traditional and Contemporary *Kānaka* 'Ōiwi Perceptions of Illness and Disease**

What is the Native Hawaiian medical inventory?



A list of *ma'i* names, origins, and related symptoms or manifestations that make-up known terms in Ka 'Oihana Maui Ola.

PART TWO: O Kēia Au

Hawai'i State Archives			
Kelsey Collection [1891-1987]			
Kalakaua's Medicine Book, n.d.			
Notes: Re: Hawaiian Ethnographic Subjects; Medicine, Hawaiian			
Term OH	Definition (Eng.)	Original (Pg #.)	Notes
kaka'i 'owi	he ma'i make	2	kii 15
haikala pepeiao	he ma'i make, aia a hoomanawanui ke kahuna, alaila Ola	3	kii 14
kaka'I haikala	he ma'i make	4	kii 15
haikala pii	he ma'i make, 'a'ohe laau e ola ai	5	kii 16
Laea	he ma'i make, 'a'ohe laau e ola ai	17	Kii 17
Wai 'opua	Ku I ke kane, make. Ku I ka wahine, Ola	18	kii 18
'eho ku	he ma'i ola	19	kii 19
'eho kaka'I & 'awai	He ma'i ola ke popolei ka laau	20	kii 20
poulewa mana	he ma'i make 'ia	21	kii 21
Lena iki pua hola	he ma'i ola ke 'ia	22	kii 22
lepo paa	he ma'i ola no ke 'ia	23	kii 23
he 'omuku	he ma'i ola no ke 'ia	24	kii 24
'omuku kea	he ma'i make ke 'ia	25	kii 25
pehu holoku	Elua 'ano o ke 'ia ma'i, he ma'i make, he ma'i ola	26	kii 26
kaka'I kumu lena maluna & 'eho malalo	ma'i ola ke pololei ka laau	27	kii 27
pou lewa	ma'i make ke hala ka laau. 'Ina pololei ka laau, ola no	28	kii 28
nae o waiku	make, 'a'ole 'e ola	29	kii 29
nae o waiku ola	he ma'i ola ke 'ia	30	kii 30
ha'ili	he ma'i make	31	kii 31
puaa hulu 'ole	he ma'i make	32	kii 32
noo I nanea	he ma'i ola ke loa I ka laau a ke kahuna, a he ma'i make ke loa'a 'ole I ke kahuna.	33	kii 33
uma lei & kea	he ma'i ola, he hano na'e	34	kii 34
niau poo muku	he ma'i ola	35	kii 35
'opua hinale	he ma'i ola ke popolei ka laau	36	kii 36
kaka'I mae opu	he ma'i ola	37	kii 37
papaku kumu lena	he ma'i ola ke pololei ka laau, ma'i make ke hala ka laau	38	kii 38
eho kaloa	he ma'i ola	39	kii 39
Wai 'opua kue	he ma'i wahine. He ma'i ola ke pono ka hana 'ana	40	kii 40
wai 'opua kalawa	he ma'i ola. He ma'i wahine	41	kii 41
wai 'opua waha puhi	he ma'i wahine. He ma'i make	42	kii 42
moku lehua	he ma'i make	43	kii 43

FOX_Kūkulu Ola Hou

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Presented March 13, 2017

TABLE 6. Example of Native Hawaiian medical reference terms and categories

Comprehensive medical reference categories for traditional medicine practitioners, physicians, clinicians, students, educators and health care professionals				
Terms	Definition	Notes	Kūkulu Ola Example “Ma’i Kama’āina” Naema’i: Severe Asthma	Kūkulu Ola Example “Ma’i Malihini” Hānō: Asthma
Etiology	Cause of disease (ma’i)	Significant risk factors e.g., death in the family, or a curse	Kānaenae: A propitiatory sacrifice; an offering to the akua to appease their anger (Laieik. p. 27). Chanted supplicating prayer; chant of eulogy or praise (the chanter hesitates at regular intervals to recover breath) (Pukui, 1983).	For example, when discussing a disease, such as asthma, its risk factors, such as allergens, genetic predisposition in the family, or excess vog one day
Mechanism	Mechanical description of the cause	Triggers of ma’i; critical during the assessment process to reach a diagnosis and recommend treatment	He ala i ka ma’i: Obstruction in the air passage (HEN vol.1 p. 323-329, 340-346, 323a-333a) Naenae: phystic, a wasting of the lungs (MsSC Handy Box 7.10)	Constricting of airspace and making it harder for the afflicted person to breathe. Continued phthisis can leave one vulnerable to “consumption” or pulmonary tuberculosis
Pathology	Structural and functional changes as a result of the ma’i	Describes what is happening	Pani i luna ka ma’i: Shutting off the breath (HEN vol.1 p. 323-329, 340-346, 323a-333a)	The bronchioles of the lungs become inflamed by the previously mentioned risk factors. This inflammation makes the bronchioles larger, in defense, mucus forms as a defense
Symptom	Change in this indicates the ma’i	Usually the complaints of the patient, e.g., pain, discomfort, dream/nightmare	Hanu pa’a ka ma’i: the clogging up of the nasal passage (HEN vol.1 p. 323-329, 340-346, 323a-333a) Nae ka ma’i: shortness of breath, to breathe hard, to pant, labored breaths (HEN vol.1 p. 323-329, 340-346, 323a-333a; Pukui, 1983)	Shortness of breath; pain in the chest
Sign	Indicator of a ma’i	When the healer or clinician can observe the manifestation, e.g., fever, increased respiratory rate, inability to focus	Hanu pa’a: A head cold, to have stifled breathing (Pukui, 1983) Nae-owaiku: wheezing (HEN vol. 1 p. 1626 -1640)	Wheezing sound in the lungs when the person breathes

What is the Hawaiian taxonomy of ma'i?



Scientific classification of *ma'i*
into different categories.

Adapted for practice in
Ka 'Oihana Maui Ola
to improve tracking of diseases,
conditions and health problems
for ax, dx, tx.

TABLE 7. *Taxonomy from the National Academies of Sciences, Engineering, and Medicine*

From: *Proceedings of the National Academy of Sciences*

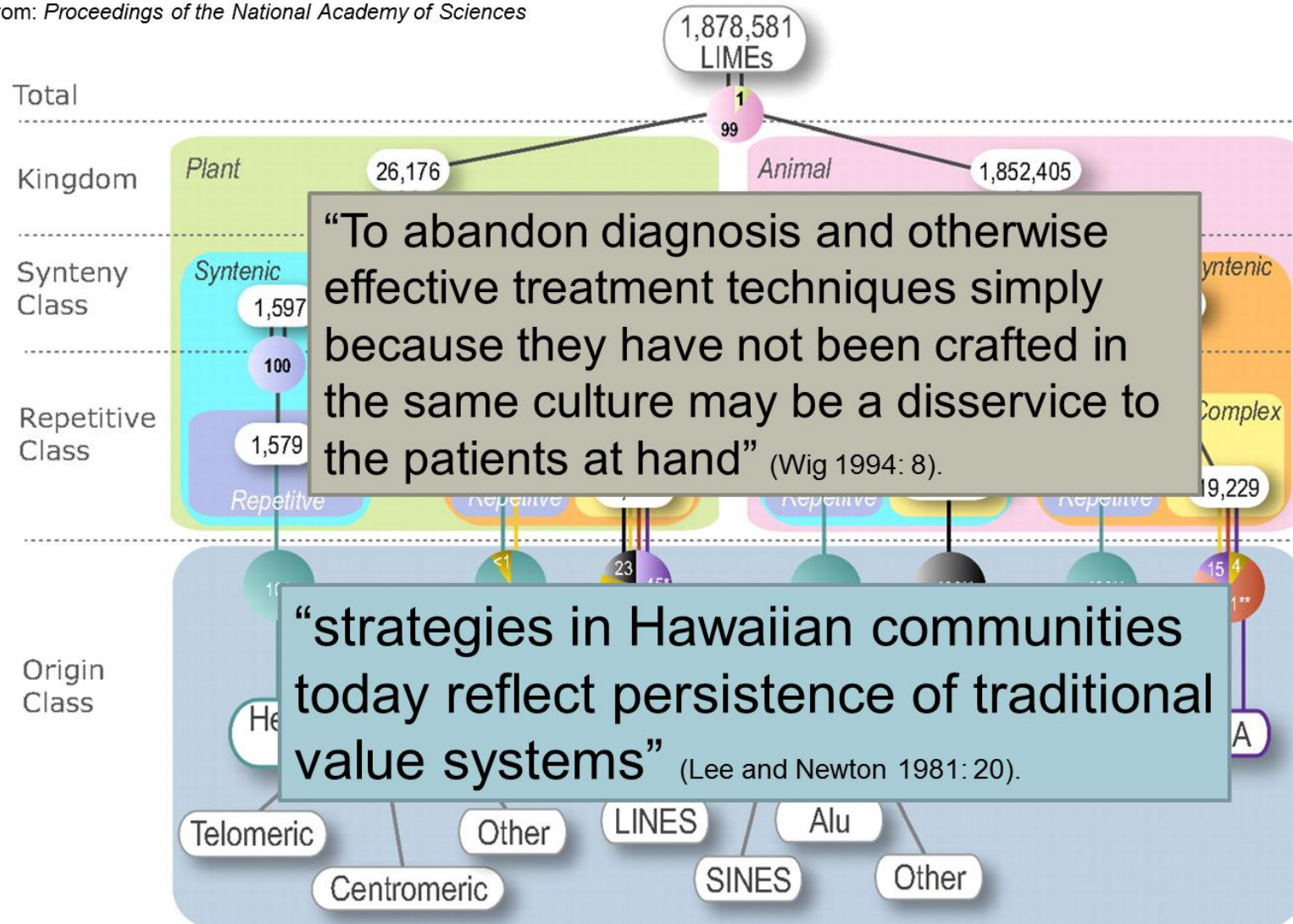
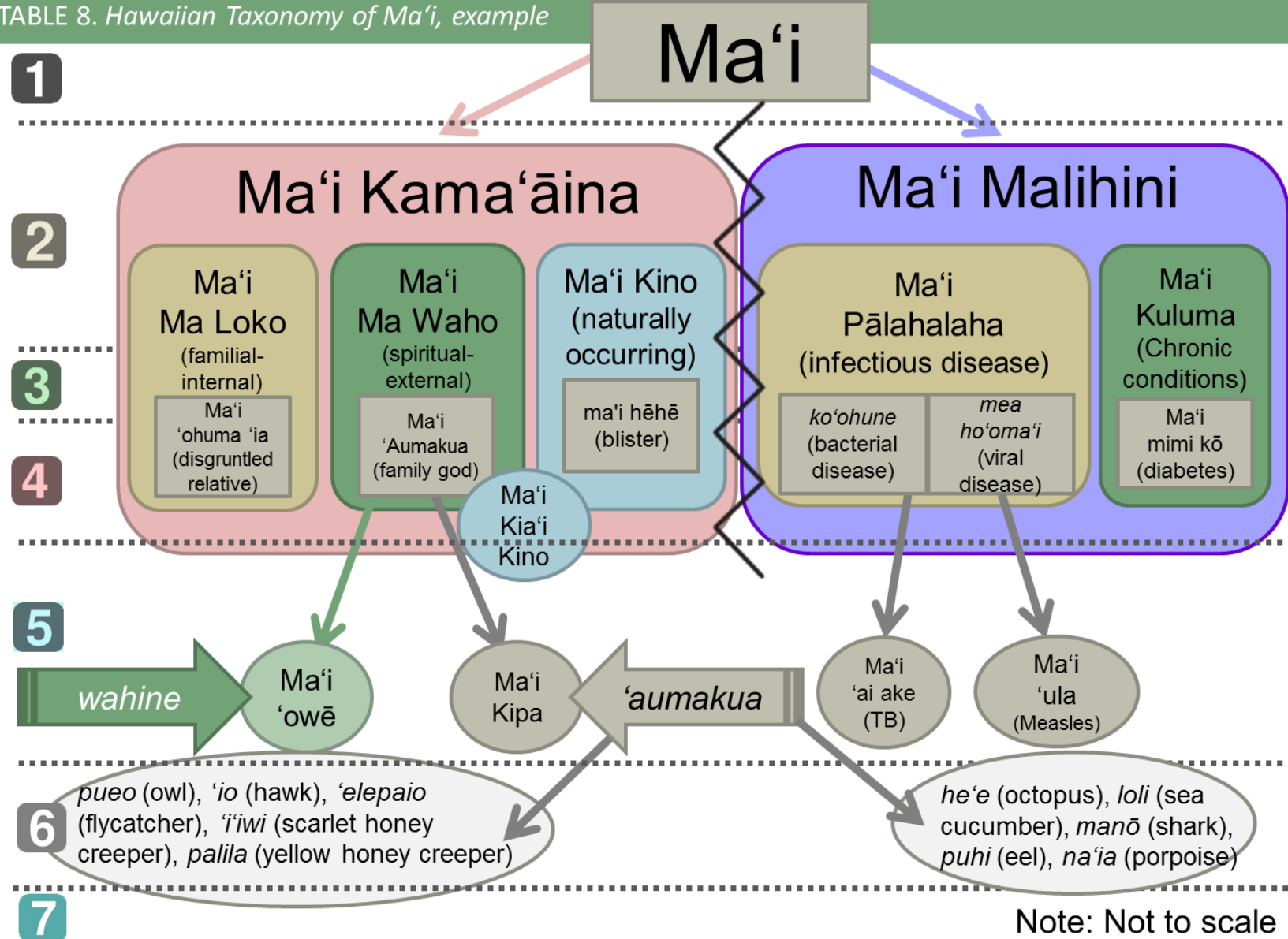


TABLE 8. Hawaiian Taxonomy of Ma'i, example



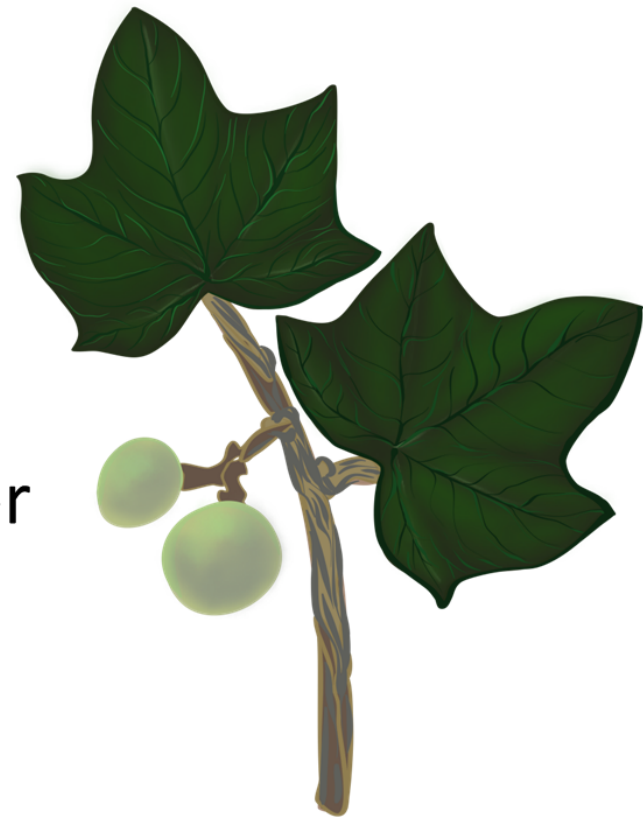
What are the main findings?

- 7 phases
- 8 arms
- 11 archives
- 50 study contributors
- 100,000+ records
- 7,001 terms
- 75 classes and categories



What is the significance?

1. Document knowledge of Hawaiian *ma'i*
2. Make study findings and data publicly available
3. Improve diagnostic procedures for NH health informed by Hawaiian *ma'i*
4. Create quality standards for culturally and linguistically appropriate services in NH health



PART TWO: O Kēia Au

What are the implications?

MORAL .

- The naming (or diagnosing) of a Hawaiian *ma'i* is a socially powerful event for *Kānaka 'Ōiwi*.

INTERPERSONAL .

- Hawaiian *ma'i* are amalgamations of bodily symptoms, social valuations, and phenomenological interaction. They illustrate the strategic presentation of “self” in many parts of one’s daily life and relationship to their layers of well-being.

CULTURAL .

- Classifications take into account the cultural characteristics of those *ma'i* (population at risk) and their interactions with the natural, familial and supernatural environment (etiology), with traditional health practitioners or clinicians (intervention).

BIOMEDICAL .





- Promotes balancing of ethical and scientific integrity in clinical research; crafts cultural information about the benefits of classification devices in populations with traditional belief systems.

POLICY .

- *Ma'i* philosophically and functionally symbolize traditional exemplars of ancestrally-based wisdom in *Ka 'Oihana Maui Ola*. The customs, rituals and practices related to Hawaiian *ma'i* should be protected for *Kānaka 'Ōiwi* and their self-determined right toward improved well-being.

SUMMARY

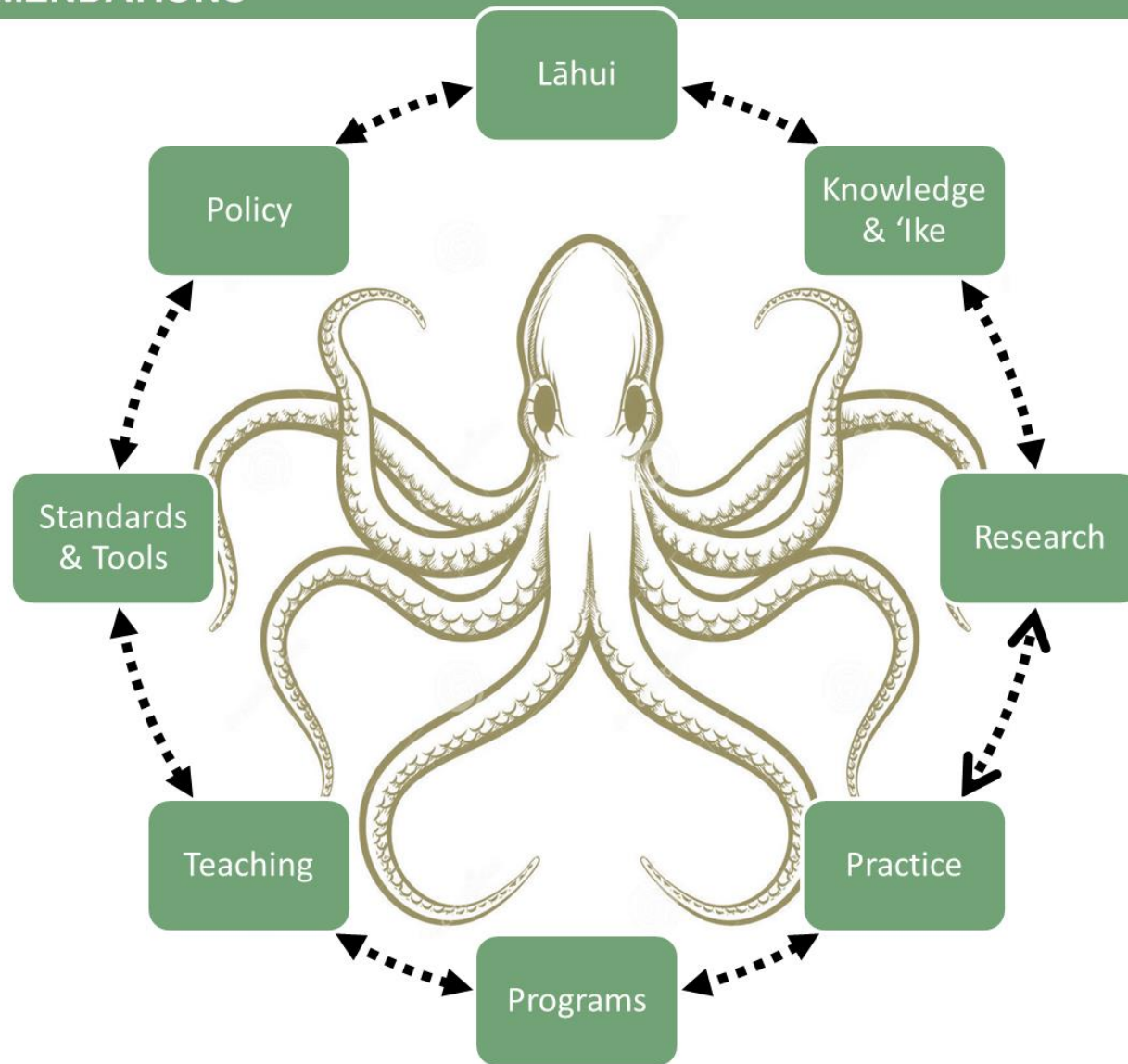
Ma'i Embedded in Medical Context, History, and Agendas

<i>O Ka Wā Mamua</i>	<i>Ka Mo'ohihia</i>	<i>O Kēia Au</i>	<i>O Ka Wā Mahope</i>
The Historical and Cultural Context of Well-being Among Kānaka 'Ōiwi	The General Entanglements of Kānaka 'Ōiwi as Historical Linkage to the Past	Contemporary <i>Ma'i</i> as a Indicator of Imbalance Among Kānaka 'Ōiwi	The Future Relationship and Context of Well-being Among Kānaka 'Ōiwi
<i>Ma'i Kama'āina</i>	<i>Ma'i Malihini</i>	<i>Ma'i Kuluma</i>	<i>Ma'i 'Ano Hou</i>
Native Illness	Foreign Disease	Chronic Conditions	Emerging Imbalance
Ex: <i>Ma'i Kepa</i>	Ex: <i>Ma'i 'Ai Ake</i> (TB)	Ex: <i>Ma'i Mimi Kō</i> (Diabetes)	Ex: Rapid 'Ōhi'a Death
 <ol style="list-style-type: none"> 1. Medicinal Use: 'Awa 2. <i>Ma'i</i> Treatment: Leaves are used by <i>kahuna makani</i> to treat <i>ma'i ma waho</i> 3. Kino lau: Kāne 	 <ol style="list-style-type: none"> 1. Medicinal Use: <i>Pōpolo</i> 2. <i>Ma'i</i> Treatment: The sap from the leaves and juice from the berry are used in to treat <i>nakinaki</i> 3. Kino lau: Kāne 	 <ol style="list-style-type: none"> 1. Medicinal Use: <i>Kukui</i> 2. <i>Ma'i</i> Treatment: Leaves are used in <i>lomilomi</i> to treat swelling and <i>pehu</i> 3. Kino lau: Lono 	 <ol style="list-style-type: none"> 1. Medicinal Use: 'Ōhi'a 2. <i>Ma'i</i> Treatment: Leaves are used to treat <i>muhe'e kea</i> in <i>ho'ohānau keiki</i> 3. Kino lau: Kāne, Kū, Laka



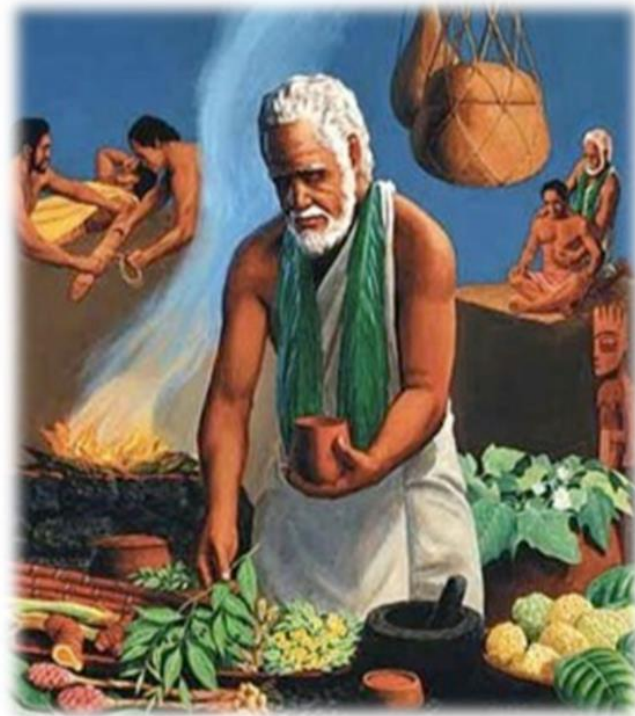
Next Steps and Future Work...

RECOMMENDATIONS



CHALLENGES FOR PI

- PI
- Small sample size (?)
- Saturation (?)
- Volume of data collected
- Creation of research team
- Making and maintaining contact
- Gatekeeping in traditional medicine community
- Reprinted editions from original text
- References, footnotes for academic citation
- Recent scholarly articles on traditional Hawaiian medicine
- Data security
- Protection of ancestral knowledge
- Everyone wants the remedies and tx



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What was your process as the PI?



Ways to embody *ola*:

- Took *lā'au* everyday
- Lomilomi* when possible
- Ho'oponopono* weekly
- Pule* often
- No'ono'o pono*: reflect and process after every session
- Kīpuka*: generative spaces
- Ōlelo no'eau*: weekly proverbial sayings
- Ho'oikaika kino*: Run, walk, hike
- 'Ai kūpele*: Vegan, no alcohol
- Pa'akai*: daily salt baths
- Mālama 'āina*: monthly

How to deflect *ma'i*:

- Not reading or writing about topics when not "ready"
- If not coming naturally, let it go
- Listen to own signs and queues
- Identify *hō'ailona*
- Trust in my *na'au*
- 'awa*

SOFTWARE & TECHNOLOGY

- Microsoft Office Suit
- EndNote publishing software
- Atlas.ti QDA software
- Rstudio statistical package
- Recording software
- Papakilo Database - DL Consulting Ltd.
- Tiki Toki software
- GoToMeeting
- 10 TB hard drive
- 1 TB USB military grade
- Asus Touchscreen Convertible Laptop w/extended keyboard
- Sony ICD-UX533 Digital Voice Recorder w/Music Player
- Xerox Work Centre 7855i
- Blue Yeti Pro Microphone
- Nikon DSLR Camera+lenses



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For a more detailed look at the full Kūkulu Ola Hou
mo'ohihia timeline, please go to:

<https://www.tiki-toki.com/timeline/entry/774640/Kkulu-Ola-Hou-Timeline/>

*Kū ka'i 'ia ka hā loa lā
Pāwehi mai nā lehua
Mai ka ho'oku'i a ka hālāwai lā
Mahalo e Nā Akua
Mahalo e nā kūpuna lā, 'eā
Mahalo me ke aloha lā
Mahalo me ke aloha lā.*

The great breath has been exchanged
Honored and adorned is the Lehua
From zenith to horizon
Gratitude and thanks to our Akua
Gratitude and thanks to our beloved ancestors
Gratitude, admiration, thanks, and love
To all who are present, both seen and unseen.
(Kēhau Camara)

ACKNOWLEDGEMENTS



Me ka mahalo piha: With Well-Filled Gratitude



Ka Pā o Lonopūhā

Eia kōu 'ai lā, 'o ke ola



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'aumakua

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FOX_Kūkulu Ola Hou

ACADEMIC PURPOSES ONLY.

Presented March 13, 2017







E lawe i ke a'ō a mālama, a e 'oi mau ka na'auao.

He who takes his teachings and applies them increases his knowledge.

(Pukui, 1983, #328)

NĪNAU & KŪKĀKŪKĀ

Questions, Comments,
& Discussion



Ho'omana'o 'ana: In Cherished Memory

Kūkulu o nā lani 'ehā: four pillars just above the horizon where the sea meets the sky



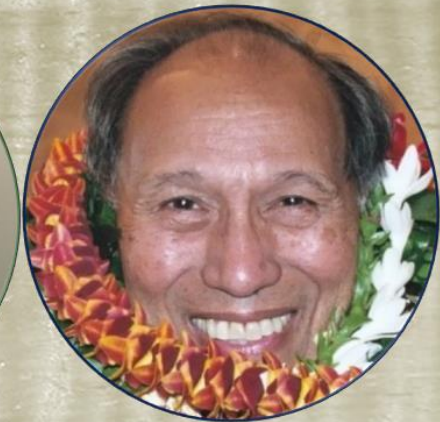
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John
Ka'imikaua
1958–2006



Kupuna Wahine
Rachel
Māhealani
(Dutro) Fox
1925–2007



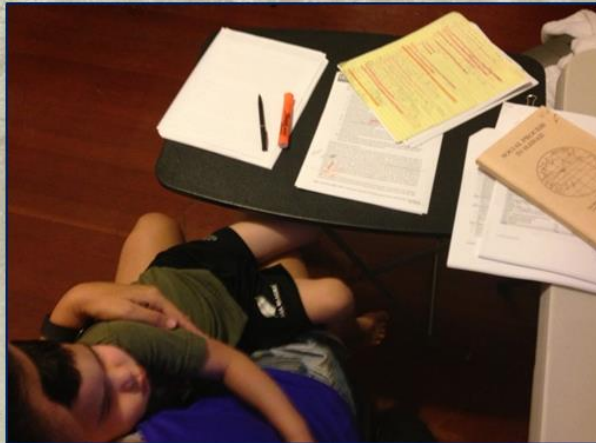
*Committee
Chair*
Rosanne
Harrigan
1945–2016



*JABSOM
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Kaua
Kekuni Blaisdell
1925–2016

Ho'ola'a: Dedicated to La'ikū Kahiluonālani Morales

Kūkulu o ka honua: the region just below the horizon where the sky meets the foundation



KŪKULU OLA HOU

Rebuilding Native Hawaiian Health by Reconnecting Ancestral Practices of Traditional Medicine:

An Inventory of Researched Customs, Rituals, and
Practices Relating to Hawaiian *Ma'i*.

Kealoha Fox, ABD, MA

PhD Dissertation, Final Oral Defense

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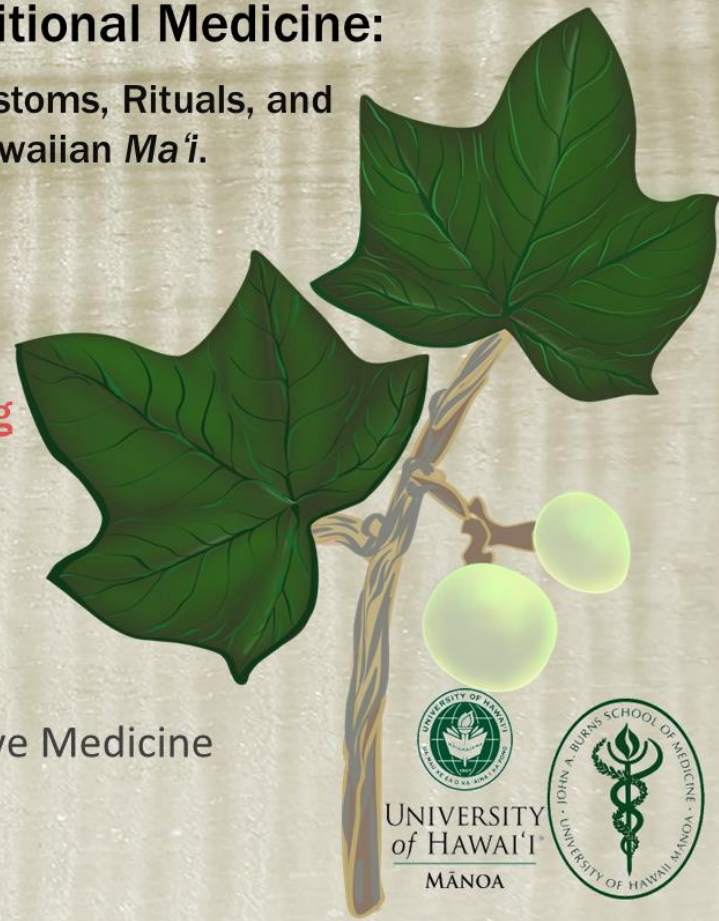
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Clinical Research Program



NOTES

¹ Misfortune is but one way Hawaiian *ma‘i* is defined in the literature to varying degrees, for example “illness” (Kamakau 1991: 134), “sick” (Kamakau 1976: 106), “unhealthy” (Chun 1994: 264), “pain” (Chai 2005: 210), “discomfort” (Pukui *et al.* 1972: 10), “ailment” (Bushnell 1993: 306), “disease” (Pukui *et al.* 1986: 221). For the purposes of this discussion, I have excluded the definition and use of *ma‘i* referring to male or female genitalia (Handy *et al.* 1953: 94) or “menstruating” (Kent 1986: 58). Generally, this article will describe *ma‘i* in text as an illness or disease to provide a working context for analysis. Use of Hawaiian terms are presented as found in the referenced source, to include original spelling and use of diacritical markings. Otherwise, Hawaiian words are spelled and provided with a simplified definition using Pukui and Elbert (1986).

² For the purposes of this report, Native Hawaiian is defined in US Public Law 103–150 as “any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawai‘i.” The term Native Hawaiian is used interchangeably throughout this report with *kanaka ‘ōiwi*, *kanaka maoli* and Hawaiian.

³ All procedures performed in studies involving human participants were in accordance with the ethical standards of the University of Hawai‘i at Mānoa Institutional Review Board, Human Studies Program CHS#23530. Informed consent, permission and reference to intellectual property were obtained from all individual participants included in the study. Of equal care, the committee and cultural expertise that oversaw this work included community review and approval through Nā Limahana O Lonopūhā, Native Hawaiian Health Consortium prior to the

study being pursued. The principal investigator worked closely with the committee and project team to maintain the highest level of respect, both culturally and ethically.

⁴ For a more detailed look at the full Kūkulu Ola Hou *ma ‘i malihini and ma ‘i ahulau* timeline, please go to: <https://www.tiki-toki.com/timeline/entry/774640/Kkulu-Ola-Hou-Timeline/>

GLOSSARY

#	<i>‘ōlelo Hawai‘i</i>	Simple definition, contextualized for Kūkulu Ola Hou
1	<i>“ahulau ihola nā kānaka i ka make”</i>	“Epidemics that caused bodies of kānaka to be heaped up”.
2	<i>a‘ahu‘i</i>	aching vein or tendon
3	<i>‘ai kūpele</i>	therapeutic nutrition
4	<i>‘a‘i ‘o‘ole‘a</i>	stiff neck
5	<i>‘ai pono</i>	balanced meal
6	<i>‘aiāhu‘a</i>	Illness that came from secretly breaking the kapu of the gods
7	<i>‘āina</i>	land
8	<i>akua</i>	god, deity
9	<i>ali‘i</i>	Chief, chiefess, officer, ruler, monarch, noble, aristocrat, king, queen, royal
10	<i>‘aumakua. ‘aumākua (pl)</i>	Family or personal gods, deified ancestors who might assume different embodiments
11	<i>‘awa</i>	kava (Piper methysticum)
12	<i>hāhā</i>	diagnosis by palpation
13	<i>ha‘ili</i>	stroke
14	<i>hakahaki ‘iwi</i>	chiropractic
15	<i>hana ‘ino</i>	evil behavior
16	<i>he‘e</i>	squid, octopus, an ‘aumakua
17	<i>hihia</i>	Entangled, interwoven, involved, perplexed, hampered
18	<i>hōaiā</i>	to act wickedly or lead others astray
19	<i>hō‘ailona</i>	signs, omens
20	<i>ho‘ohāpai keiki</i>	conception of pregnancy
21	<i>Ho‘oilō</i>	rainy season
22	<i>Ho‘okilo</i>	wasted to flesh by illness
23	<i>ho‘oma‘ema‘e</i>	cleansing
24	<i>ho‘omaio</i>	to be weak in the muscles of the thigh
25	<i>ho‘ona‘auao</i>	education
26	<i>ho‘oponopono</i>	to set to pono, resolution
27	<i>hū‘ena</i>	wrath
28	<i>hula</i>	dance
29	<i>‘ike</i>	knowledge
30	<i>inoa</i>	name
31	<i>ka mo‘ohihia</i>	era of generational entanglement
32	<i>Ka ‘Oihana Maui Ola</i>	traditional Hawaiian health structure
33	<i>Ka ‘ākaukukui</i>	area of land
34	<i>kahuna</i>	priestly specialist; Historical literature reveals at least 10 major orders and 107 secondary ones
35	<i>kahuna makani</i>	experts, professional in spirits
36	<i>kai</i>	sea water

37	<i>kānaka maoli</i>	Native Hawaiian
38	<i>kānaka ʻōiwi</i>	Native Hawaiian
39	<i>kāne</i>	males
40	<i>kapu</i>	Taboo, prohibition (Polynesian, tapu); A name of the system of Hawaiian religion
41	<i>kauka</i>	physician
42	<i>kāula</i>	seer
43	<i>kilo</i>	expert observation
44	<i>ko ʻohune</i>	bacterial
45	<i>ku ʻi a lua</i>	warrior art form
46	<i>kūhewa</i>	heart attack
47	<i>kūkākūkā</i>	discussion
48	<i>kukui</i>	Candlenut tree (<i>Aleurites moluccana</i>), a large tree in the spurge family bearing nuts containing white, oily kernels which were formerly used for lights; hence the tree is a symbol of enlightenment.
49	<i>Kūkulu Ola Hou</i>	Rebuild health
50	<i>Kulu</i>	name of moon; “to drop” or “to pass, as time does.”
51	<i>kumu</i>	teacher
52	<i>kūpuna</i>	elder, ancestor, grandparent
53	<i>lā ʻau</i>	plant
54	<i>lā ʻau kāhea</i>	instantaneous healing
55	<i>lā ʻau lapa ʻau</i>	medicinal plants and herbs
56	<i>lāhui</i>	Hawaiian people, nation, race, nationality
57	<i>lau hala</i>	panadanus leaf used for plaiting
58	<i>lawai ʻa</i>	fishing
59	<i>lili</i>	jealousy
60	<i>loa ʻa I ke ea</i>	transmissible in the air through sneezing, kissing, coughing, etc
61	<i>loea</i>	expert
62	<i>lokuloku</i>	numbness of the limbs
63	<i>loloka ʻa</i>	dizziness that affects eyesight
64	<i>lomilomi</i>	physiotherapy, massage
65	<i>ma ʻi ahulau</i>	epidemic (a class of ma ʻi malihini)
66	<i>mahi ʻai</i>	agriculturalist
67	<i>māhū</i>	transgendered
68	<i>ma ʻi</i>	imbalance, illness, disease, disorder
69	<i>ma ʻi ʻai ake</i>	TB/tuberculosis (consumption)
70	<i>ma ʻi ʻano hou</i>	emerging imbalance
71	<i>ma ʻi ʻaumakua</i>	illness from the family deity
72	<i>ma ʻi haole</i>	foreign disease
73	<i>ma ʻi kama ʻāina</i>	native illnesses or indigenous diseases which occurred in Ka ʻOihana Maui Ola pre-contact
74	<i>ma ʻi kino</i>	naturally occurring in the body (a class of ma ʻi kama ʻāina)

75	<i>ma'i kuluma</i>	chronic conditions (a class of ma'i malihini)
76	<i>ma'i ku'una</i>	inherited diseases (a class of ma'i kama'āina)
77	<i>ma'i lele</i>	communicable disease (a class of ma'i malihini)
78	<i>ma'i lepera</i>	Leprosy
79	<i>ma'i luku</i>	pandemic (a class of ma'i malihini)
80	<i>ma'i ma loko</i>	internal; from within family (a class of ma'i kama'āina)
81	<i>ma'i ma waho</i>	external; from outside (a class of ma'i kama'āina)
82	<i>ma'i malihini</i>	introduced illnesses or foreign diseases that were integrated into Ka 'Oihana Maui Ola post-contact
83	<i>ma'i mimi kō</i>	diabetes
84	<i>ma'i 'ohuma 'ia</i>	disgruntlement of a relative
85	<i>ma'i 'ōku'u 'Ākia</i>	Asiatic cholera
86	<i>ma'i 'owē</i>	female misfortune
87	<i>ma'i pālahalaha</i>	infectious disease (a class of ma'i malihini)
88	<i>ma'i 'ula</i>	measles (rubeola)
89	<i>mainaina</i>	anger
90	<i>māio</i>	wasted condition
91	<i>makana</i>	gift
92	<i>mākua</i>	parent generation
93	<i>mākua o 'o</i>	matured parent, middle-aged
94	<i>mana</i>	special energy
95	<i>mana'i 'ino</i>	hatred
96	<i>mauli ola</i>	Breath of life, power of healing
97	<i>mea ho 'oma'i</i>	viral
98	<i>muhe'e kea</i>	having to do with the spirit of the dead
99	<i>mūhune 'ino</i>	pathogen
100	<i>Nā Limahana O Lonopūhā</i>	Native Hawaiian Health Consortium
101	<i>na 'au</i>	gut; seat of emotions
102	<i>na 'auao</i>	wisdom
103	<i>nakinaki</i>	Difficult breathing
104	<i>Nana</i>	name of month
105	<i>Native Hawaiian</i>	For the purposes of this report, Native Hawaiian is defined in US Public Law 103–150 as any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawai'i. The term Native Hawaiian is used interchangeably throughout this report with kanaka 'ōiwi, kanaka maoli, and Hawaiian.
106	<i>nīnau</i>	questions
107	<i>nūpepa</i>	Hawaiian language newspapers
108	<i>o ka wā mahope</i>	future time
109	<i>o ka wā mamua</i>	era of generational entanglement
110	<i>o kēia au</i>	contemporary present

111	<i>‘ohana</i>	family, kin
112	<i>‘ōhi ‘a</i>	kind of tree
113	<i>‘ōku ‘u</i>	cholera
114	<i>ola</i>	Life, health, well-being, living, livelihood
115	<i>‘ōlelo Hawai‘i</i>	Hawaiian language
116	<i>oli</i>	chanting
117	<i>‘ōuli</i>	signs and symptoms
118	<i>pa‘akai</i>	Hawaiian salt
119	<i>pae ‘āina</i>	Hawaiian archipelago
120	<i>pāmake</i>	plagues
121	<i>papa ‘ili ‘ili</i>	stones for learning hāhā and ma‘i
122	<i>pehu</i>	swelling
123	<i>piko</i>	spiritual connection
124	<i>piko ma‘i</i>	genitalia; future
125	<i>piko po‘o</i>	Fontanel; past
126	<i>piko waena</i>	umbilicus; present
127	<i>piwa lenalena</i>	yellow fever
128	<i>pōhaku</i>	sacred stones possessing mana
129	<i>pōniuniu</i>	grief-stricken
130	<i>pōpolo</i>	black nightshade (<i>Solanum nigrum</i>)
131	<i>pule</i>	prayer
132	<i>pūlele</i>	Scrofulous (in TB lymphatic glands, especially those of the neck.)
133	<i>pūlo ‘ulo ‘u</i>	steam bath for illness
134	<i>wāhine</i>	females
135	<i>wai</i>	fresh water

Note: Use of Hawaiian terms are presented as found in the referenced source, to include original spelling and use of diacritical markings. Otherwise, Hawaiian words are spelled and provided with a simplified definition using Pukui and Elbert (1986).

Or go to www.wehewehe.org, where direct translations are available.

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